HELLS CANYON DAM

HEARINGS

BEFORE THE

SUBCOMMITTEE ON IRRIGATION AND RECLAMATION

OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS HOUSE OF REPRESENTATIVES

EIGHTY-FOURTH CONGRESS

FIRST SESSION

ON

H. R. 4719, H. R. 4730, H. R. 4739, and H. R. 4740

TO AUTHORIZE THE CONSTRUCTION, OPERATION, AND MAINTENANCE OF THE HELLS CANYON DAM ON THE SNAKE RIVER BETWEEN IDAHO AND OREGON, AND FOR RELATED PURPOSES

JULY 11, 13, 14, AND 15, 1955

Printed for the use of the Committee on Interior and Insular Affairs

Serial No. 14

UNITED STATES
GOVERNMENT PRINTING OFFICE
67129 WASHINGTON : 1956

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

CLAIR ENGLE, California, *Chairman*

WAYNE N. ASPINALL, Colorado
LEO W. O'BRIEN, New York
WALTER ROGERS, Texas
Mrs. GRACIE PFOST, Idaho
JAMES A. HALEY, Florida
GEORGE A. SHUFORD, North Carolina
ADAM CLAYTON POWELL, Jr., New York
ED EDMONDSON, Oklahoma
LEE METCALF, Montana
GEORGE H. CHRISTOPHER, Missouri
B. F. SISK, California
STEWART L. UDALL, Arizona
CHARLES C. DIGGS, Jr., Michigan
J. T. RUTHERFORD, Texas
Mrs. EDITH GREEN, Oregon

E. L. BARTLETT, Alaska
ANTONIO FERNÓS-ISERN, Puerto Rico

A. L. MILLER, Nebraska
JOHN P. SAYLOR, Pennsylvania
J. ERNEST WHARTON, New York
E. Y. BERRY, South Dakota
WILLIAM A. DAWSON, Utah
JACK WESTLAND, Washington
JOHN R. PILLION, New York
CLIFTON YOUNG, Nevada
CRAIG HOSMER, California
JOHN J. RHODES, Arizona
HAMER H. BUDGE, Idaho
J. EDGAR CHENOWETH, Colorado
JAMES B. UTT, California

Mrs. JOSEPH R. FARRINGTON, Hawaii

Subcommittee on Irrigation and Reclamation

WAYNE N. ASPINALL, Colorado, *Chairman*

CLAIR ENGLE, California
LEO W. O'BRIEN, New York
WALTER ROGERS, Texas
Mrs. GRACIE PFOST, Idaho
JAMES A. HALEY, Florida
GEORGE A. SHUFORD, North Carolina
ADAM CLAYTON POWELL, Jr., New York
ED EDMONDSON, Oklahoma
LEE METCALF, Montana
GEORGE H. CHRISTOPHER, Missouri
B. F. SISK, California
STEWART L. UDALL, Arizona
CHARLES C. DIGGS, Jr., Michigan
J. T. RUTHERFORD, Texas
Mrs. EDITH GREEN, Oregon

E. L. BARTLETT, Alaska
ANTONIO FERNÓS-ISERN, Puerto Rico

A. L. MILLER, Nebraska
JOHN P. SAYLOR, Pennsylvania
J. ERNEST WHARTON, New York
E. Y. BERRY, South Dakota
WILLIAM A. DAWSON, Utah
JACK WESTLAND, Washington
JOHN R. PILLION, New York
CLIFTON YOUNG, Nevada
CRAIG HOSMER, California
JOHN J. RHODES, Arizona
HAMER H. BUDGE, Idaho
J. EDGAR CHENOWETH, Colorado
JAMES B. UTT, California

Mrs. JOSEPH R. FARRINGTON, Hawaii

Sidney L. McFarland, *Engineering Consultant*

DEPOSITED BY THE
UNITED STATES OF AMERICA

CONTENTS

Statement of— Page

Alex O. Coleman, director, Idaho State Reclamation Association, St. Anthony, Idaho ---- 296
Lynn Crandall, district engineer, U. S. Geological Survey, Idaho Falls, Idaho, and Snake River watermaster, Idaho State Department of Reclamation ---- 94
C. I. Hoisington, Chief, Estimates and Analyses Branch, Bureau of Reclamation, Department of the Interior, Denver, Colo ---- 56, 94
Holland H. Houston, consulting engineer, Olympia, Wash ---- 259
Earl D. Ostrander, Director of Administrative Management, Bonneville Power Administration, Portland, Oreg ---- 59, 94
R. P. Parry, counsel, Idaho Power Co., Twin Falls, Idaho ---- 251, 319
Louis G. Puls, Head of the Design Section, Bureau of Reclamation, Department of the Interior, Denver, Colo ---- 19, 94
John R. Riter, Chief Development Engineer, Bureau of Reclamation, Department of the Interior, Denver, Colo ---- 57, 94
N. V. Sharp, Filer, Idaho ---- 303
J. H. Silbaugh, president of the board of directors, North Side Canal Co., Jerome, Idaho ---- 300
W. G. Sloan, consulting engineer, La Mesa, Calif ---- 337
Ethel Steel, farm operator, Parma, Idaho ---- 183
William Welsh, executive secretary, National Reclamation Association, Washington, D. C ---- 318
Elwyn L. White, area engineer, Bureau of Reclamation, Department of the Interior, Boise, Idaho ---- 62, 94
Bernard Williams, vice president, Morrison-Knudsen Co., Inc., Boise, Idaho ---- 268
Asher B. Wilson, farmer and attorney, Twin Falls, Idaho ---- 185

HELLS CANYON DAM

MONDAY, JULY 11, 1955

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON IRRIGATION AND RECLAMATION OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to call, at 10:05 a. m., in the committee room, New House Office Building, Hon. Wayne N. Aspinall (chairman of the subcommittee) presiding.

Mr. ASPINALL. The Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs will now be in session for hearings on the bills, H. R. 4719, by Mrs. Pfost; H. R. 4730, by Mrs. Green; H. R. 4739, by Mr. Magnuson; H. R. 4740, by Mr. Metcalf; bills having for their purpose the authorization of the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes.

(The bills referred to follow:)

[H. R. 4719, 84th Cong., 1st sess.]

A BILL To authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to foster comprehensive development of the resources of the Snake River and its tributaries, the Congress, in the exercise of its constitutional authority to provide for the general welfare, to regulate commerce among the States, and to make all needful rules and regulations respecting property belonging to the United States, and for the purposes, among others, of controlling and utilizing the Snake River and its tributaries for beneficial objects, including generation of hydroelectric power and energy for the national defense and other purposes, irrigation of lands, navigation, and flood control, and for purposes incidental to any of the foregoing, including providing financial assistance to Federal reclamation projects, the Department of the Interior, under the supervision and direction of the Secretary of the Interior (hereinafter referred to as the Secretary), is authorized and directed to construct, substantially in accordance with the physical plans set out in the reports referred to hereinafter as—

(a) the Hells Canyon Dam, as described in volume 2 of House Document Numbered 473, Eighty-first Congress, and as modified by the report of the Commissioner of Reclamation approved by the Secretary on May 11, 1951; and

(b) the Scriver Creek power facilities of the Payette unit of the Mountain Home division, as described in the report of the Commissioner of Reclamation approved by the Secretary on May 11, 1951.

The Secretary in prosecuting his activities under this section and in operating and maintaining said projects shall, except as is otherwise provided in this Act, be governed by the Federal reclamation laws (Act of June 17, 1902, 32 Stat. 388, and Acts amendatory thereof or supplementary thereto).

SEC. 2. The operation of the Hells Canyon Dam shall be only such as does not conflict with present and future rights to the use of water for irrigation or

other beneficial consumptive uses, whether now or hereafter existing, valid under State law, of the upstream waters of the Snake River and its tributaries.

SEC. 3. (a) In order to facilitate the development of the Central and Upper Snake River Basin, and also that of downstream areas, the Hells Canyon Dam and powerplant and the Federal Columbia River power system shall be interconnected, and five hundred thousand kilowatts of power attributable to the Hells Canyon project, or such portion thereof as is required from time to time to meet loads under contracts made within this reservation, shall be made available for use in the Central and Upper Snake River Basin and to all other parts of Idaho lying outside the Central and Upper Snake River Basin.

(b) Electric energy available from Hells Canyon Dam and powerplant and the Scriver Creek power facilities not required for the operation thereof shall be marketed by the Secretary in accordance particularly with sections 1, 2, 3, 4, 5, 6, and 7 of the Bonneville Project Act of 1937, as amended (16 Stat. 832), dealing with transmisson, distribution, sale, and rate schedules.

(c) The Secretary is authorized and directed to supply and transmit from the McNary Dam the necessary construction power for the Hells Canyon Dam.

SEC. 4. (a) The initial works of the projects authorized by section 1 of this Act and any additional works or division, including the irrigation features of the Payette unit of the Mountain Home division, that may be authorized as hereinafter provided shall be treated as one project for the purpose, among others, of providing for the application of project revenues to the return of reimbursable costs in accordance with the provisions of the Federal reclamation laws. Federal reclamation developments proposed to be constructed in the Central and Upper Snake River Basin may be authorized as works or divisions of these projects, but only if such authorization is specifically provided by an act of Congress. Recommendations by the Secretary with respect to such authorizations shall be made in connection with the Secretary's report and findings under section 9 of the Reclamation Project Act of 1939 (53 Stat. 1187), which report shall include findings as to the costs and benefits of the proposed developments and as to the effect of such authorization on the project's power rate structure. In the case of the irrigation of features of the Payette unit of the Mountain Home division, such a report shall be made and transmitted to the Congress not later than during the term of the Eighty-fifth Congress.

(b) The term "Central and Upper Snake River Basin" as used in this Act shall mean the area comprising the drainage basin of the Snake River and its tributaries down to and including the Clearwater River.

SEC. 5. There are hereby authorized to be appropriated, out of moneys not otherwise appropriated, such sums as may be required to carry out the purposes of this Act.

[H. R. 4730, 84th Cong., 1st sess.]

A BILL To authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to foster comprehensive development of the resources of the Snake River and its tributaries, the Congress, in the exercise of its constitutional authority to provide for the general welfare, to regulate commerce among the States, and to make all needful rules and regulations respecting property belonging to the United States, and for the purposes, among others, of controlling and utilizing the Snake River and its tributaries for beneficial objects, including generation of hydroelectric power and energy for the national defense and other purposes, irrigation of lands, navigation and flood control, and for purposes incidental to any of the foregoing, including providing financial assistance to Federal reclamation projects, the Department of the Interior, under the supervision and direction of the Secretary of the Interior (hereinafter referred to as the "Secretary"), is authorized and directed to construct, substantially in accordance with the physical plans set out in the reports referred to hereinafter as—

(a) The Hells Canyon Dam, as described in volume 2 of House Document Numbered 473, Eighty-first Congress, and as modified by the report of the Commissioner of Reclamation, approved by the Secretary on May 11, 1951; and

(b) the Scriver Creek power facilities of the Payette unit of the Mountain Home division, as described in the report of the Commissioner of Reclamation, approved by the Secretary on May 11, 1951.

The Secretary in prosecuting his activities under this section and in operating and maintaining said projects shall, except as is otherwise provided in this Act, be governed by the Federal reclamation laws (Act of June 17, 1902; 32 Stat. 388, and Acts amendatory thereof or supplementary thereto).

SEC. 2. The operation of the Hells Canyon Dam shall be only such as does not conflict with present and future rights to the use of water for irrigation or other beneficial consumptive uses, whether now or hereafter existing, valid under State law, of the upstream waters of the Snake River and its tributaries.

SEC. 3. (a) In order to facilitate the development of the Central and Upper Snake River Basin, and also that of downstream areas, the Hells Canyon Dam and powerplant and the Federal Columbia River power system shall be interconnected, and five hundred thousand kilowatts of power attributable to the Hells Canyon project, or such portion thereof as is required from time to time to meet loads under contracts made within this reservation, shall be made available for use in the Central and Upper Snake River Basin and to all other parts of Idaho lying outside the Central and Upper Snake River Basin.

(b) Electric energy available from Hells Canyon Dam and powerplant and the Scriver Creek power facilities not required for the operation thereof shall be marketed by the Secretary in accordance particularly with sections 1, 2, 3, 4, 5, 6, and 7 of the Bonneville Project Act of 1937, as amended (16 Stat. 832), dealing with transmission, distribution, sale and rate schedules.

(c) The Secretary is authorized and directed to supply and transmit from the McNary Dam the necessary construction power for the Hells Canyon Dam.

SEC. 4. (a) The initial works of the projects authorized by section 1 of this Act and any additional works or division, including the irrigation features of the Payette unit of the Mountain Home division, that may be authorized as hereinafter provided shall be treated as one project for the purpose, among others, of providing for the application of project revenues to the return or reimbursable costs in accordance with the provisions of the Federal reclamation laws. Federal reclamation developments proposed to be constructed in the Central and Upper Snake River Basin may be authorized as works or divisions of these projects but only if such authorization is specifically provided by an Act of Congress. Recommendations by the Secretary with respect to such authorizations shall be made in connection with the Secretary's report and findings under section 9 of the Reclamation Project Act of 1939 (53 Stat. 1187), which report shall include findings as to the costs and benefits of the proposed developments and as to the effect of such authorization on the project's power rate structure. In the case of the irrigation features of the Payette unit of the Mountain Home division, such a report shall be made and transmitted to the Congress not later than during the term of the Eighty-fifth Congress.

(b) The term "Central and Upper Snake River Basin" as used in this Act shall mean the area comprising the drainage basin of the Snake River and its tributaries down to and including the Clearwater River.

SEC. 5. There are hereby authorized to be appropriated, out of moneys not otherwise appropriated, such sums as may be required to carry out the purposes of this Act.

[H. R. 4739, 84th Cong., 1st sess.]

A BILL To authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to foster comprehensive development of the resources of the Snake River and its tributaries, the Congress, in the exercise of its constitutional authority to provide for the general welfare, to regulate commerce among the States, and to make all needful rules and regulations respecting property belonging to the United States, and for the purposes, among others, of controlling and utilizing the Snake River and its tributaries for beneficial objects, including generation of hydroelectric power and energy for the national defense and other purposes, irrigation of lands, navigation and flood control, and for purposes incidental to any of the foregoing, including providing financial assistance to Federal reclamation projects, the Department of the Interior, under the supervision and direction of the Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized and directed to construct, substantially in accordance with the physical plans set out in the reports referred to hereinafter as—

(a) the Hells Canyon Dam, as described in volume 2 of House Document Numbered 473, Eighty-first Congress, and as modified by the report of the Commissioner of Reclamation approved by the Secretary on May 11, 1951; and

(b) the Scriver Creek power facilities of the Payette unit of the Mountain Home division, as described in the report of the Commissioner of Reclamation, approved by the Secretary on May 11, 1951.

The Secretary in prosecuting his activities under this section and in operating and maintaining said projects shall, except as is otherwise provided in this Act, be governed by the Federal reclamation laws (Act of June 17, 1902; 32 Stat. 388, and Acts amendatory thereof or supplementary thereto).

SEC. 2. The operation of the Hells Canyon Dam shall be only such as does not conflict with present and future rights to the use of water for irrigation or other beneficial consumptive uses, whether now or hereafter existing, valid under State law, of the upstream waters of the Snake River and its tributaries.

SEC. 3. (a) In order to facilitate the development of the Central and Upper Snake River Basin, and also that of downstream areas, the Hells Canyon Dam and powerplant and the Federal Columbia River power system shall be interconnected, and five hundred thousand kilowatts of power attributable to the Hells Canyon project, or such portion thereof as is required from time to time to meet loads under contracts made within this reservation, shall be made available or use in the Central and Upper Snake River Basin and to all other parts of Idaho lying outside the Central and Upper Snake River Basin.

(b) Electric energy available from Hells Canyon Dam and powerplant and the Scriver Creek power facilities not required for the operation thereof shall be marketed by the Secretary in accordance particularly with sections 1, 2, 3, 4, 5, 6, and 7 of the Bonneville Project Act of 1937, as amended (16 Stat. 832), dealing with transmission, distribution, sale, and rate schedules.

(c) The Secretary is authorized and directed to supply and transmit from the McNary Dam the necessary construction power for the Hells Canyon Dam.

SEC. 4. (a) The initial works of the projects authorized by section 1 of this Act, and any additional works or division, including the irrigation features of the Payette unit of the Mountain Home division, that may be authorized as hereinafter provided shall be treated as one project for the purpose, among others, of providing for the application of project revenues to the return of reimbursable costs in accordance with the provisions of the Federal reclamation laws. Federal reclamation developments proposed to be constructed in the Central and Upper Snake River Basin may be authorized as works or division of these projects, but only if such authorization is specifically provided by an Act of Congress. Recommendations by the Secretary with respect to such authorizations shall be made in connection with the Secretary's report and findings under section 9 of the Reclamation Project Act of 1939 (53 Stat. 1187), which report shall include findings as to the costs and benefits of the proposed developments and as to the effect of such authorization on the project's power rate structure. In the case of the irrigation features of the Payette unit of the Mountain Home division, such a report shall be made and transmitted to the Congress not later than during the term of the Eighty-fifth Congress.

(b) The term "Central and Upper Snake River Basin" as used in this Act shall mean the area comprising the drainage basin of the Snake River and its tributaries down to and including the Clearwater River.

SEC. 5. There are hereby authorized to be appropriated, out of moneys not otherwise appropriated, such sums as may be required to carry out the purposes of this Act.

[H. R. 4740, 84th Cong., 1st sess.]

A BILL To authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to foster comprehensive development of the resources of the Snake River and its tributaries, the Congress, in the exercise of its constitutional authority to provide for the general welfare, to regulate commerce among the States, and to make all needful rules and regu-

lations respecting property belonging to the United States, and for the purposes, among others, of controlling and utilizing the Snake River and its tributaries for beneficial objects, including generation of hydroelectric power and energy for the national defense and other purposes, irrigation of lands, navigation, and flood control, and for purposes incidental to any of the foregoing, including providing financial assistance to Federal reclamation projects, the Department of the Interior, under the supervision and direction of the Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized and directed to construct, substantially in accordance with the physical plans set out in the reports referred to hereinafter as—

(a) The Hells Canyon Dam, as described in volume 2 of House Document Numbered 473, Eighty-first Congress, and as modified by the report of the Commissioner of Reclamation, approved by the Secretary on May 11, 1951; and

(b) The Scriver Creek power facilities of the Payette unit of the Mountain Home division, as described in the report of the Commissioner of Reclamation, approved by the Secretary on May 11, 1951.

The Secretary in prosecuting his activities under this section and in operating and maintaining said projects shall, except as is otherwise provided in this Act, be governed by the Federal reclamation laws (Act of June 17, 1902; 32 Stat. 388, and Acts amendatory thereof or supplementary thereto).

SEC. 2. The operation of the Hells Canyon Dam shall be only such as does not conflict with present and future rights to the use of water for irrigation or other beneficial consumptive uses, whether now or hereafter existing, valid under State law, of the upstream waters of the Snake River and its tributaries.

SEC. 3. (a) In order to facilitate the development of the Central and Upper Snake River Basin, and also that of downstream areas, the Hells Canyon Dam and powerplant and the Federal Columbia River power system shall be interconnected, and five hundred thousand kilowatts of power attributable to the Hells Canyon project, or such portion thereof as is required from time to time to meet loads under contracts made within this reservation, shall be made available for use in the Central and Upper Snake River Basin and to all other parts of Idaho lying outside the Central and Upper Snake River Basin.

(b) Electric energy available from Hells Canyon Dam and powerplant and the Scriver Creek power facilities not required for the operation thereof shall be marketed by the Secretary in accordance particularly with sections 1, 2, 3, 4, 5, 6, and 7 of the Bonneville Project Act of 1937, as amended (16 Stat. 832), dealing with transmission, distribution, sale, and rate schedules.

(c) The Secretary is authorized and directed to supply and transmit from the McNary Dam the necessary construction power for the Hells Canyon Dam.

SEC. 4. (a) The initial works of the projects authorized by section 1 of this Act and any additional works or division, including the irrigation features of the Payette unit of the Mountain Home division, that may be authorized as hereinafter provided shall be treated as one project for the purpose, among others, of providing for the application of project revenues to the return of reimbursable costs in accordance with the provisions of the Federal reclamation laws. Federal reclamation developments proposed to be constructed in the Central and Upper Snake River Basin may be authorized as works or divisions of these projects but only if such authorization is specifically provided by an Act of Congress. Recommendations by the Secretary with respect to such authorizations shall be made in connection with the Secretary's report and findings under section 9 of the Reclamation Project Act of 1939 (53 Stat. 1187), which report shall include findings as to the costs and benefits of the proposed developments and as to the effect of such authorization on the project's power rate structure. In the case of the irrigation features of the Payette unit of the Mountain Home division, such a report shall be made and transmitted to the Congress not later than during the term of the Eighty-fifth Congress.

(b) The term "Central and Upper Snake River Basin" as used in this Act shall mean the area comprising the drainage basin of the Snake River and its tributaries down to and including the Clearwater River.

SEC. 5. There are hereby authorized to be appropriated, out of moneys not otherwise appropriated, such sums as may be required to carry out the purposes of this Act.

(COMMITTEE NOTE: Pursuant to permission granted on p. 125, following are statements of Representatives Pfost, Magnuson, and Bow:)

STATEMENT OF HON. GRACIE PFOST, OF IDAHO, ON HELLS CANYON DAM

Mr. Chairman, I am naturally gratified that the Irrigation and Reclamation Subcommittee of the House Interior Committee is holding hearings on the Hells Canyon bill. I have long been a stanch advocate of this measure, and hearings conducted by the committee of which I am a member are a most satisfying event.

Only 7 of the 32 members presently sitting on this subcommittee were also serving on it in the 2d session of the 82d Congress when the earlier Hells Canyon hearings were held. This means that most of the members have not had an opportunity to hear testimony on this project which is of such great importance not only to the Pacific Northwest, but to the Nation as a whole, and to question those who have expert or technical information on it, or who, for one reason or another, favor or oppose it.

Mr. Chairman, Hells Canyon is the greatest undeveloped natural dam site in America. It is deeper even than the Boulder Dam in Nevada. Because it is embedded in solid rock, it is a dam builder's dream.

The basic question at issue is whether this tremendous natural resource which is the God-given heritage of all of the people, is to be fully and magnificently developed, or whether it is to be squandered by piecemeal, partial development, and then for the benefit only of a private monopoly.

The high dam, which this legislation before us would authorize, would be a multiple-purpose dam, and would squeeze every bit of value out of the Hells Canyon site.

The three low dams which the Idaho Power Co. wants to build in the Hells Canyon stretch of the Snake River would be power dams only, and not only would they produce considerably less power than the high Federal dam, but the power would be sold to the consumer at a considerably higher cost.

For the people of the Northwest and the Nation, the high dam would mean:

1. Vast quantities of low-cost power.
2. The many new industries and new jobs that low-cost power creates.
3. Immensely increased tax revenues both for the States involved and for the Federal Government.
4. Power revenues which will subsidize and make feasible new irrigation projects, and bring water to thousands of now arid acres.
5. Flood control on both the Snake and the Columbia Rivers.
6. Regulation of navigation on both rivers.
7. A wonderful new playground for hunters, fishermen, and all outdoor lovers.
8. Power at low enough cost to develop the vast phosphate beds of Idaho, and make available an almost inexhaustible supply of cheap phosphate fertilizer to the farmers of America.

Federal plans for the multiple-purpose development of the great Hells Canyon site have been in preparation for many years. The dam itself would be one of the highest in the world, and the reservoir would back up more than 90 miles into the mountain fastnesses.

The high dam is the indispensable dam. It is an essential and integral part of a fully considered, comprehensive Federal plan to develop the entire Columbia River Basin. It is a key storage dam in that plan.

The taxpayers of the Nation have already invested heavily in three dams downstream from Hells Canyon—the great Bonneville Dam, the McNary Dam, and the Dalles Dam. The high dam is necessary to protect this investment, since full power development at the downstream plants is dependent upon maximum storage above.

Brownlee, the storage dam of the trio the Idaho Power Co. wants to build, would be less than half as high and would have only about one-fourth of the storage capacity of the high Hells Canyon Dam. This would give little assurance of a continuing supply of firm power to the great cities of the Northwest now plagued with cutbacks and periodic brownouts. It would give little assurance of a firm, continuing supply of power for our defense needs—or for any other power needs that might develop in these uncertain times in which we live. We must continue to be the arsenal of democracy—and who knows what else?

I do not have to tell members of this committee that the bill before us today is in the pattern and tradition of many other bills considered and given favorable action in the past. Government ownership and development of water-power projects began nearly 150 years before our present Government was established.

Less than 18 years after the Pilgrims landed in this country in 1620, those first settlers owned and were operating a water-power project. One of the major responsibilities of Government has always been to do for the people certain things they cannot do as well for themselves.

The high Hells Canyon Dam is a shining example of something the Government can do for the people better than they can do for themselves. The project is too big—too vast—for private enterprise to undertake. The dams which private enterprise wants to build in the Hells Canyon area would simply waste and misuse a valuable natural resource—and prevent forever its full utilization for the benefit of the Nation and its people.

The responsibility of the Congress for the conservation and proper utilization of our natural resources is a broad and deep-rooted one. It is my sincere conviction, Mr. Chairman, that when the members of this committee hear all of the testimony that will be presented on the desirability of authorizing the high dam to fully conserve and develop a great natural resource, they will act favorably on the bill.

I stated earlier that I felt these hearings were particularly important and necessary because so few members of the committee had ever had an opportunity to hear testimony on the project, and to question witnesses. In my opinion, these hearings have also been made imperative by the type of decision handed down in May by Mr. William Costello, the presiding examiner at the Federal Power Commission hearings on the Idaho Power Co. application for a license to build its three low, single-purpose dams.

Mr. Costello frankly admits that the high dam would be superior in every way to the 3-dam plan of the Idaho Power Co., but recommends awarding the Idaho Power Co. license to build 1 of the dams because, in his opinion, Congress is not likely to take action "within a foreseeable time."

I should like to point out that this hearing is the first step in moving the Hells Canyon bill through the House. I should like also to point out that in the Senate, subcommittee hearings have already been held, and this bill has been favorably reported. Therefore the bill has made considerable progress toward enactment.

In my opinion, these developments torpedo Mr. Costello's reasoning. They also make it mandatory that the Federal Power Commissioners, who are now studying their examiner's recommendations, delay making a final decision until the legislative wheels are given time to turn, and all Members of Congress have an opportunity to vote on this vital project. The question at issue here is what's in the best interests of the people and the Nation as a whole, and the Congress has the right—and the responsibility, to decide what is to be done.

The examiner's decision also places another responsibility on the Federal Power Commission. Under the Federal Water Power Act, the FPC is required to make a recommendation to the Congress whenever in its opinion a given project should be developed by the Federal Government. Independent agencies often hesitate to intrude into congressional affairs, and I can well understand the reluctance of the Federal Power Commission to tell the Congress what it should do in this case, because of the violent controversy that has raged over this project. Nevertheless, in unmistakable terms, the Costello opinion points out the inescapable fact that the Federal Hells Canyon project is best. Just read these powerful words quoted from his decision:

"* * * the facts seem to point to the inescapable conclusions that with the marked and substantial advantages of the Government credit the high dam would be dollar for dollar the better investment and the more nearly ideal development of the middle Snake."

If the members of the Federal Power Commission feel they must come to some decision in the near future on the Hells Canyon project, then the only decision they can make is to send a recommendation to Congress. No other course is consistent with the opinion written by their own examiner.

The examiner's decision also spells out a half a dozen specific ways in which the high dam would be superior to the three low Idaho Power Co. dams. One is the stimulation of the electro-process industries.

Mr. Chairman, in a war to the death between freedom and communism, freedom has mighty few technological advantages to lose. The electro-process industries are vastly important to industrialization, and thus to our battle to preserve democracy. They supply the essential new needs of a new chemical and technical age.

The Costello decision states:

"The high-dam project, because of its high volume and low-cost power output, might be expected to stimulate the expansion of the electro-process industries

to a greater extent than the three-dam plan, including those which would utilize regional mineral resources."

Here is a cold, factual statement that the future of these important industries depends upon construction of the Hells Canyon project. What more can anyone ask?

Just look at these conclusions of the examiner on why a Federal Hells Canyon project would help regional industries in many ways—in assisting agriculture, relieving unemployment, and providing opportunity:

"The high-dam project just as any new source of low-cost power might be expected to do, would help the Snake River Basin by helping to—

"(*a*) Industrialize, diversify, and stabilize its still dominantly agricultural economy;

"(*b*) Reduce its seasonable unemployment where such unemployment is attributable to lack of industrial labor requirements;

"(*c*) Foster individual initiative in private business and industrial enterprise;

"(*d*) Increase business and employment opportunity, broaden the tax base, and raise income levels and standards of living."

Mr. Chairman, truly this is a remarkable decision. It states in language more vigorous than I have ever employed what a wonderful blessing the Federal construction of Hells Canyon would be to all principal phases of our economy. I do not propose to gild the lily by attempting to paraphrase such an exalted conclusion.

Here are some additional great blessings that would come to the economy of the area through construction of the high dam. Again I quote from the Costello decision:

"The high-dam project, just as any large new source of low-cost power might be expected to do, would stimulate throughout the Pacific Northwest—

"(*a*) Power-load development;

"(*b*) Greater utilization of power in industry, agriculture, commerce, community, and service activities;

"(*c*) New business and employment opportunities;

"(*d*) Expansion of production and productivity;

"(*e*) Development of minerals and other materials important to the regional and national economy and national security;

"(*f*) Strengthening of the regional and national economy."

Aren't these the most eloquent of reasons—local, State, and national—why there should be Federal development of Hells Canyon?

The key to such development, as Mr. Costello states, is the large new source of low-cost power which construction of the high dam would make possible.

Mr. Costello indicates the impossibility of any great economic expansion in the region through construction of the Idaho Power Co. dams when he says:

"We have seen how this power will have cost 6.6 mills per kilowatt-hour to produce and deliver to market, and the measure of the at-market value in the Northwest amounts to about 6 mills per kilowatt-hour. When one realizes that Bonneville Power Administration sells large amounts of firm power at about 2 mills per kilowatt-hour it is difficult to see where in the Northwest power in such amounts will be salable at triple the Bonneville rate."

The fact is that the Idaho Power Co.'s best combination of little dams and middle-sized dams would give us little more than half as much power as the high dam and at more than double the cost per kilowatt-hour.

Opponents of the high dam have been hammering away for a long time on the idea that its construction would endanger both present and future water rights of farmers living in the Upper Snake River Basin. Because some of these farmers have naturally become apprehensive about this matter—a water right is a farmer's most precious possession—I would like to discuss briefly the provisions of my bill in this respect.

My bill and section 8 of the Reclamation Act compel the Secretary of the Interior to comply with State water laws. Any rights acquired under my bill would be in accordance with the water laws of the State of Idaho.

By no stretch of the imagination can it be contended that my Hells Canyon bill will disturb any water rights or disrupt the proper allocation of water.

The mere fact that the high dam would be constructed below the farming area in my State is further proof of the sanctity of the Idaho law. The officials of the State of Idaho would administer the water in the same manner as heretofore. No authority is granted any Federal instrumentality to interfere with this allocation. In fact, it directs them to comply with these laws. It is certain that if this dam is constructed where it could not possibly stop any water used

by the farmers of the State of Idaho, then it is silly to even contend that their rights would be destroyed.

The argument that the Federal Government by its commerce clause would disrupt the water rights of the Idaho farmers is a falacious one. The Federal Government exercises its power by acts of Congress. Not once has the Congress passed any legislation that interferes with the rights of irrigators in the reclamation States. It is sheer folly to advocate that the Congress will in the future disregard the sacred rights of the water users of the West by invoking and exercising its jurisdiction under the commerce clause. Past history is ample proof that the Congress will not exercise this authority.

We can point to all of the reclamation developments in the West, and we can be assured that this authority will not be disturbed in the future, just as it has not been disturbed in the past.

Mr. Chairman, for many years now I have been thoroughly convinced of the rightness of building the high dam. Only through the high dam can the region expect to achieve the agricultural development it deserves, demands, and needs. The high dam represents comprehensive, full-scale development of our natural resources for the benefit of both this and future generations. The high dam is indispensable to national defense. The high dam will not jeopardize water rights. If ever there was a clear, uncluttered case of what's best for the people—this is it.

The Federal Power Commission examiner recognized the high-dam plan for what it is. I am confident this committee will recognize it; and I am confident that the House of Representatives as a whole, if given an opportunity to hear the pros and cons of the project, will authorize the high dam with a substantial majority.

Construction of the high dam is imperative to the economy of the Northwest. Let's build it.

STATEMENT OF CONGRESSMAN DON MAGNUSON IN SUPPORT OF H. R. 4739

I propose to keep my remarks brief today, and to confine them to the conclusions which clearly emerge, in my opinion, from the controversy which has swirled around the proposed high dam at Hells Canyon.

It seems to me that the issue involved in the authorization legislation which three of my colleagues from the Northwest and I have introduced is whether we shall have the wisdom to conserve and develop the full potential of a great river system.

The term "conservation," as applied to the Hells Canyon controversy, means several things. First, it means preserving for ourselves and for future generations the opportunity to develop the full potential of the flowing water of the Middle Snake River—and not yielding to pressures for a quick and easy partial-development plan. Second, it means integrating the development of this stretch of the Snake with the development of all of the other rivers in the Columbia River system. Third, it means working out a plan which best serves the other resources, both natural and human, in the area.

True conservation recognizes that our natural resources, vast though they may seem today, are limited. Once wasted, they never can be regained. It compels us to look beyond the pressures of today to the needs of tomorrow.

Twice Congress has had the opportunity to conserve and develop the full potential of the Hells Canyon stretch of the Snake River. Twice, shortsightedness and timidity have tied our hands. Today we are presented the third—and doubtless the last—opportunity. For I think it is clear that if this Congress does not act to reserve the Hells Canyon site for Federal construction of a high dam, the Idaho Power Co. will be given rights to this stretch of the Snake which will foreclose forever the possibility of full development of the hydroelectric potential existing there.

A great mass of testimony and study has been devoted to the high-dam proposal. Engineers of both the Army Engineers and the Bureau of Reclamation have conducted extensive studies of the project. It has received attentions at lengthy hearings conducted by committees of both the House and the Senate. The Federal Power Commission conducted hearings for more than a year on the Idaho Power Co.'s application for three dam sites in this reach of the Snake River, hearings which led to the illuminating decision of the presiding examiner.

In my opinion, the following conclusions of fact can be distilled from this great volume of testimony and discussion:

The high dam is feasible from an engineering standpoint and would repay its reimbursable costs with interest within a 50-year period, together with costs of operation and maintenance.

The high dam will produce the maximum amount of economical power.

The high dam will produce more power—substantially more power—at the site as well as downstream, than the three low dams.

I should like to point out, too, that the storage at Hells Canyon will make possible the production of additional firm power not only at dams downstream from the site, but also at dams upstream on the Columbia River from the confluence of the Snake and the Columbia, such as Rock Island, Chief Joseph, and Grand Coulee. This comes about because Hells Canyon storage would permit more efficient utilization of the storage at such dams as Grand Coulee, Albeni Falls, and Hungry Horse. I think it would be helpful for the committee to inquire into this phase of the Hells Canyon picture.

Integration of the transmission lines from a Federal Hells Canyon Dam with the Bonneville Power Administration grid will maximize the usable power throughout the entire system, as has been illustrated so dramatically by the operations of the Northwest power pool.

The high dam will provide more usable storage for flood control than the Brownlee Dam, the only storage dam in the Idaho Power Co. plan.

The high dam will yield greater benefits to navigation, not only downstream, but also on the pool behind the dam, which will permit economical development of resources situated along the canyon.

The Federal dam will provide power revenues which can be used to help finance new irrigation projects and will provide low-cost power which can be used to operate them.

The high dam will provide greater recreational opportunities than the three low dams.

The availability of a large block of low-cost power will make possible the development of nearby low-grade phosphate-rock deposits, which constitute 60 percent of the total United States supply.

The availability of a large block of low-cost power will benefit agriculture, promote industrial development, foster individual initiative and private business, and create new sources of tax revenues. And we must not overlook its potential value for national defense.

The high dam has been recommended by the Bureau of Reclamation and the Army Engineers as an essential component of the comprehensive plan for the development of the Columbia River and its tributaries.

To me, these factual conclusions lead inevitably to the policy judgment that the Federal Government should construct a high dam at Hells Canyon.

This is the only plan which promises maximum conservation and development of the full potential of an important sector of our not unlimited natural resources.

STATEMENT OF FRANK T. BOW, MEMBER OF CONGRESS, RE H. R. 4719, HELLS CANYON PROJECT

Mr. Chairman, 3 years ago when Hells Canyon Dam was first considered by this committee I had the honor of being a member of the committee and participated, as you will recall, in the discussion and decision on the authorizing legislation.

You will recall, also, that after many days of hearings in which we explored every aspect of the problem, hearing many witnesses, the Subcommittee on Irrigation and Reclamation, which then as now had a Democratic majority, voted unanimously to postpone indefinitely the bill to authorize construction of a Federal dam at Hells Canyon.

Twelve members of the majority party and nine members of the minority joined in this unanimous repudiation of the scheme, even thought it was then vigorously espoused by the Secretary of the Interior and the Commissioner of Reclamation. This was a nonpartisan vote. It was based on the conclusion of all of the members that the proposed Federal dam was unsound from the standpoint of engineering and cost and would be an unwise interference with proper development of the waters of the Snake River.

My interest has continued for several reasons.

First, I think every Member of Congress should be interested in any project that affects the taxpayers of his district. The Hells Canyon proposal very definitey affects the people of the 16th District of Ohio. On the basis of the esti-

mates given, the taxpayers of Ohio would have to contribute more than $26 million. They would realize no benefit from this heavy financial burden, but rather would continue to contribute through the years, along with all other taxpayers, to pay the interest on the money spent on this dam.

Second, I think every Member of Congress should be interested in the very serious financial situation of this country and the tremendous national debt which threatens us with economic disaster unless we put our house in order. I am not willing to vote for any increase in that debt. Every cent spent on Hells Canyon would have to be borrowed. It would be an addition to the debt. We simply cannot afford it at this time.

Third, I am sincerely and genuinely interested in proper resource management. I have and will continue to support worthwhile and sound reclamation and river work where there is shown to be a national need, an undisputed benefit, an assurance that the original cost will be repaid to the Treasury, and where there is no alternative to Federal construction.

All of these points are lacking in the pending proposal. There is no national need for the construction of the high dam at Hells Canyon; rather I consider it would ge a national liability. There is no undisputed benefit to be derived from the high-dam proposal; rather I believe it to be a detriment to the sound, comprehensive development of the resources of the Snake Valley. There is no assurance that the original cost of the Federal project would ever be repaid, and we have absolute proof that the interest cost during construction would never be repaid. There is a non-Federal alternative in the proposals of a private power company to develop the resource on a sound economic basis. Authorization of an unsound project will be a blow to the entire reclamation program.

Fourth, as a member of the Appropriations Committee I am very seriously concerned about the increasing burden of legislative authorizations which put such heavy pressure upon my committee and the Budget Bureau to exceed the reasonable spending limits we endeavor to establish. More of that later.

These points were among the compelling reasons for my vote against the project 3 years ago.

Nothing has occurred since to change my opinion.

Many things have occurred to convince me that our judgment was correct and that the Hells Canyon proposal is an ill-advised effort to saddle upon the taxpayers of all the United States an uneconomic and unwise power project. At the cost of all the taxpayers, and to the everlasting detriment of the people who live in the Snake River Valley of Idaho, we are asked to spend over half a billion dollars on an engineering monstrosity, the sole purpose of which is to advance the political aspirations of the Bonneville Power Administration and its supporters.

There was reason to consider this project 3 years ago when the Department of the Interior urged it upon the Congress. Now, even the Department of the Interior has withdrawn its support, and it seems to me that there is very little excuse for the Congress to go ahead at great expense and at great loss of time to consider a thoroughly repudiated scheme.

I trust that all of these factors may serve to convince the present members of the committee to table the legislation.

As I have said, I am not opposed to reclamation or to proper river development. I have supported sound projects in the past and expect to do so in the future. But I do not subscribe to the theory that river development with hydroelectric generation is a sacred cow and that any such project, especially if it is extremely costly and may establish some new record for the dam builders, must be accepted without question.

As a member of the Appropriations Committee, I can point out to you that literally hundreds of millions of dollars worth of authorized river projects are already on the statute books awaiting appropriation. I believe our committee has made it plain from time to time that it feels some of these might well be reconsidered before construction begins. I feel certain that the Appropriations Committee would not look with favor on the Hells Canyon project even if it were authorized.

That brings up a very pertinent point which I believe should be a paramount consideration to those who are truly concerned about additional power generation in the Columbia Basin.

It is reasonable to assume at this point that the Idaho Power Co. will secure approval for at least a part of its proposed development on the Snake. The report of the examiner of the Federal Power Commission leaves little doubt on that score. Idaho Power, at its own expense, can and will produce power in this area within 3 years after it gets the green light.

On the other hand, in the unlikely event that this committee and this Congress should authorize Hells Canyon, I doubt sincerely that the Budget Bureau would request, or the Appropriations Committee would recommend, funds to commence the project at any time in the near future. It would have to take its place on the long list of projects I have already mentioned—projects totaling several hundred million dollars—many of which have been authorized for several years, and many of which impress me as being sound and worthwhile and desirable to be built as soon as Federal finances permit.

At the conclusion of the hearings 3 years ago I submitted a series of interrogatories to the Secretary of the Interior, and they appear in the hearings along with his replies. I want to call the committee's attention to these interrogatories, and particularly to the Secretary's reply on page 669 concerning interest during construction. If this is still the policy of the Bureau of Reclamation, it means that the estimated cost of the dam and transmission lines is only a small part of the total cost to the taxpayers. As I have said, it means that the people of my disrict and every other congressional district will also assume the burden of interest payments on the money borrowed to construct this project.

Recent developments seem to indicate the taxpayers are getting restive and reluctant to continue to pay $45 million annually in interest on the money the Federal Government has poured into the TVA. I doubt not but what a similar attitude will develop toward other Federal projects which are not able to support themselves and which place one section of the country in a more favorable economic position that all other sections at the expense of those other sections.

In the interest of good government, of sound economy, of an honest reclamatin program, I think the committee should again reject Hells Canyon.

Mr. ASPINALL. This legislation would authorize the Secretary of the Interior to construct the Hells Canyon Dam, powerplant and pertinent facilities and the Scriver Creek power facilities as described in reports of the Department dated 1951. These power facilities would be interconnected with the Federal Columbia River power system. The legislation also provides that additional irrigation developments in the central and upper Snake River Basin, which may be authorized by Congress in the future, may be integrated with the works herein authorized for the purpose of financial assistance to such irrigation developments from Hells Canyon and Scriver Creek power revenues.

The staff has prepared a very succinct, brief statement of the engineering aspects and the financing aspects of the legislation on which the hearings are going to be held. The Chair would suggest that members of the committee might well familiarize themselves with that.

The Chair also wishes to call to the attention of the committee that hearings were held on similar legislation during the 82d Congress on H. R. 5743 of that Congress; that those hearings have been published as serial No. 20 of the 82d Congress. The Chair would suggest that the members of the committee who have come to this committee since that time might well familiarize themselves with the contents of such document.

As the Chair recalls, there are only a few members of the present committee who heard the hearings at that time. Although these hearings will be somewhat repetitious to the hearings held in 1952, nevertheless, there is a great deal of valued information that can be gleaned from reading the hearings held in the 82d Congress.

Four days have been set aside for these hearings, 2 days, today and Wednesday, to be given over to the proponents, Thursday and Friday to be given over to those who oppose.

The Chair would ask permission at this time that the witnesses appearing here on technical matters——

Dr. MILLER. Will the gentleman yield at that point? Do you plan on having afternoon hearings?

Mr. ASPINALL. I do not plan on having an afternoon hearing today for the simple reason that several have asked that we do not have an afternoon hearing today.

Dr. MILLER. I would prefer you do not because there is some important legislation on the floor. I have been opposing afternoon hearings. I have not objected so far on the floor, but I think I would be inclined to object to afternoon hearings because of the press of important legislation before the Congress.

Mr. ASPINALL. The Chair will divide the time as fairly as he can. The Chair would ask that the six witnesses appearing here on technical explanation and so forth of the legislation be permitted to put on their testimony this morning within the hour, and then that they be cross examined en banc within the hour following. Is there objection to such proceeding?

Mr. SAYLOR. Reserving the right to object, Mr. Chairman. In view of the nature of this project, in view of the amount that is involved, in view of the fact that members of the committee have not had an opportunity to have presented to them written statements of the gentlemen who are about to testify, in view of the fact that the staff has not complied with the rules of the House and furnished to the members of the committee briefs of the statements which will be presented, I object.

Mr. ASPINALL. We will proceed in regular order then.

Mr. BUDGE. A parliamentary inquiry, Mr. Chairman?

Mr. ASPINALL. The gentleman is entitled to a parliamentary inquiry. May the Chair suggest this time is not being taken out of the time of the proponents.

Mr. BUDGE. I simply wanted to ask the Chair if he had a report from the Department on this legislation. I do not have one on my desk.

Mr. ASPINALL. The Chair does not have a report from the Department addressed to the House. The Chair does have a copy of a report from the Department under date of May 2, on identical legislation introduced in the Senate and signed by the Secretary of the Interior. The Chair is further advised that the report from the Department will be before this committee on Wednesday of this week and the report will be a similar report, and it will be a report which is unfavorable to the legislation.

Mr. PILLION. Mr. Chairman, a parliamentary inquiry.

Mr. ASPINALL. The gentleman will state it.

Mr. PILLION. I question the jurisdiction of this committee with respect to this bill, Mr. Chairman. As I understand it, the bill authorizes a hydro power development without any reclamation features to it. Insofar as the present legislation is concerned, it is a declaration of intent or declaration of future reclamation projects to be perhaps included in the overall development of this scheme. But as of today, and with respect to the legislation itself, it deals primarily and exclusively with a hydro power development, and properly the bill should be before the Public Works Committee or some other committee other than this committee which deals with reclamation and irrigation as its primary function.

Mr. ASPINALL. What does the gentleman wish the chairman to do about it?

Mr. PILLION. I would suggest we not sit here and waste a week or two on a bill that properly should be before some other committee, and I suggest that we refer it back to the Public Works Committee where it properly belongs.

Mr. ASPINALL. Does the gentleman have a motion to that effect?

Mr. PILLION. I will make that motion, Mr. Chairman.

Mr. ASPINALL. A motion of reference is always in order provided a motion of greater importance does not take precedence over it.

The Chair will simply state this: As far as the matter of jurisdiction is concerned, this committee has nothing to do with the jurisdiction. In the opinion of the Chair the gentleman should have made objection at the time the bill was referred to the full committee.

All those in favor of the motion of the gentleman from New York signify by saying "Aye."

Those opposed will say "No."

The Chair is of the opinion that the "Noes" have it. The "Noes" do have it and the motion of the gentleman from New York is lost.

Mrs. PFOST. Mr. Chairman, I move the time this morning be divided, with the technical witnesses giving oral testimony for the first half of the time between now and 12 o'clock, with the last half of the time being reserved for committee questions.

Mr. ASPINALL. Is there a second to the motion?

Mrs. GREEN. Second.

Mr. BUDGE. I desire to be heard on the motion, Mr. Chairman.

Dr. MILLER. A parliamentary inquiry, Mr. Chairman. Will we be following the rules of the House where each member will get 5 minutes or will there be unlimited assignment of time to whoever happens to have the time?

Mr. ASPINALL. Of course, the gentleman knows that the rules of the House, the 5-minute rule of the House does not apply to this committee in hearings, and with the motion that is made we will take the questioning in the line of seniority, going from the chairman's left to his right back and forth. Does that answer you?

Dr. MILLER. Yes, but not satisfactorily. I was wondering if the motion of the lady would include the 5-minute period.

Mr. ASPINALL. The Chair would put the first motion first, and then the gentleman's motion, if he has a motion.

The gentleman from Idaho is recognized in opposition.

Mr. BUDGE. Mr. Chairman, as I understand the motion, that would mean that there are some 6 technical witnesses here this morning, that each of those witnesses would give their testimony in its entirety, and only at the completion of the testimony of all 6 witnesses would the committee be entitled to cross-examine.

Mr. ASPINALL. The gentleman is correct. May the Chair say he understands the statements are prepared for delivery to the members of the committee and that the witnesses are in position to give short oral statements as to what is contained in their statements.

Mr. BUDGE. Proceeding further in opposition to this motion. These six witnesses form the basis of the only technical information which will come before this committee to authorize a project which costs in its entirety in the neighborhood of $1,350 million. Now to limit this time to 1 hour and then require members of this committee to cross-examine those witnesses after the completion of the testimony of all six seems to me to be such procedure as would hamstring the commit-

tee in its attempt to find out just what are the technical bases for the passage of this legislation.

I think that in any event the committee should be entitled to cross-examine each witness after the presentation of his testimony. Personally, I think in order to get any intelligent information before this committee in a 2-hour period that the witnesses should be cross-examined as they are giving their testimony on specific points. This is an extremely complicated subject, and certainly if we are going to base legislation calling for the expenditure of $1,350 million in Federal funds on the testimony of these 6 men, then the committee should be given full opportunity of cross-examination, and the motion made would foreclose any such intelligent cross-examination. For that reason I hope that the motion is defeated.

Mrs. GREEN. Mr. Chairman?

Mr. ASPINALL. The Chair recognizes Mrs. Green.

Mrs. GREEN. I move the previous question.

Mr. ASPINALL. The previous question has been moved. Those in favor of the previous question signify by saying "Aye."

Those opposed will say "No."

The previous question is ordered.

All those in favor of the motion of Mrs. Pfost signify by saying "Aye."

Those opposed say "No."

The Chair is of the opinion that the ayes have it.

Mr. BUDGE. I ask the ayes and nays.

Mr. ASPINALL. The clerk will call the roll.

Mrs. HARRIS. Mr. Berry?

(No response.)

Mrs. HARRIS. Mr. Budge?

Mr. BUDGE. No.

Mrs. HARRIS. Mr. Chenoweth?

(No response.)

Mrs. HARRIS. Mr. Christopher?

Mrs. PFOST. Mr. Christopher votes "aye" by proxy.

Mr. BUDGE. Mr. Chairman, I should like to examine the proxy. If they are going to be used on motions of this kind, it must be a general proxy, I should think.

Mr. ASPINALL. The gentleman has the right to come up here and look at the proxy.

Mrs. HARRIS. Mr. Dawson?

(No response.)

Mrs. HARRIS. Mr. Diggs?

Mrs. PFOST. Mr. Diggs votes "aye" by proxy.

Mrs. HARRIS. Mr. Edmondson?

Mr. EDMONDSON. Aye.

Mrs. HARRIS. Mrs. Green?

Mrs. GREEN. Aye.

Mrs. HARRIS. Mr. Haley?

Mr. HALEY. Present.

Mrs. HARRIS. Mr. Hosmer.

(No response.)

Mrs. HARRIS. Mr. Metcalf?

Mr. METCALF. Aye.

Mrs. HARRIS. Mr. Miller?

(No response.)
Mrs. HARRIS. Mr. O'Brien?
Mrs. PFOST. Aye by proxy.
Mrs. HARRIS. Mrs. Pfost.
Mrs. PFOST. Aye.
Mrs. HARRIS. Mr. Pillion?
Mr. PILLION. No.
Mrs. HARRIS. Mr. Powell?
Mrs. PFOST. Aye by proxy.
Mrs. HARRIS. Mr. Rhodes?
(No response.)
Mrs. HARRIS. Mr. Rogers?
Mr. ROGERS. Aye.
Mrs. HARRIS. Mr. Rutherford?
Mr. RUTHERFORD. Aye.
Mrs. HARRIS. Mr. Saylor?
Mr. SAYLOR. No.
Mrs. HARRIS. Mr. Shuford?
Mr. SHUFORD. Aye.
Mrs. HARRIS. Mr. Sisk?
Mr. SISK. Aye.
Mrs. HARRIS. Mr. Udall?
Mrs. PFOST. Aye, by proxy.
Mrs. HARRIS. Mr. Utt?
(No response.)
Mrs. HARRIS. Mr. Westland?
Mr. WESTLAND. No.
Mrs. HARRIS. Mr. Wharton?
(No response.)
Mrs. HARRIS. Mr. Young?
(No response.)
Mrs. HARRIS. Mr. Engle?
Mr. ENGLE. Aye.

Mr. ASPINALL. The vote is 14 ayes and 4 nays and 1 "present." The motion is carried. The procedure will be accordingly.

At this time the Chair calls to the witness table Mr. L. G. Puls, head of Concrete Dams Design Section, Bureau of Reclamation.

Mr. SAYLOR. A point of order, Mr. Chairman.

Mr. ASPINALL. The gentleman will state his point of order.

Mr. SAYLOR. I have objection to the witness appearing and testifying on the ground a quorum is not present. I make the point of order a quorum is not present.

Mr. ASPINALL. The Chair will count.

The clerk will call the roll for a quorum.

Mrs. HARRIS. Mr. Berry?
(No response.)
Mrs. HARRIS. Mr. Budge?
Mr. BUDGE. Here.
Mrs. HARRIS. Mr. Chenoweth?
(No response.)
Mrs. HARRIS. Mr. Christopher?
(No response.)
Mrs. HARRIS. Mr. Dawson?
(No response.)

Mrs. HARRIS. Mr. Diggs?
(No response.)
Mrs. HARRIS. Mr. Edmondson?
Mr. EDMONDSON. Here.
Mrs. HARRIS. Mrs. Green?
Mrs. GREEN. Here.
Mrs. HARRIS. Mr. Haley?
Mr. HALEY. Here.
Mrs. HARRIS. Mr. Hosmer?
(No response.)
Mrs. HARRIS. Mr. Metcalf?
Mr. METCALF. Here.
Mrs. HARRIS. Mr. Miller?
(No response.)
Mrs. HARRIS. Mr. O'Brien?
(No response.)
Mrs. HARRIS. Mrs Pfost?
Mrs. PFOST. Here.
Mrs. HARRIS. Mr. Pillion?
Mr. PILLION. Here.
Mrs. HARRIS. Mr. Powell?
(No response.)
Mrs. HARRIS. Mr. Rhodes?
(No response.)
Mrs. HARRIS. Mr. Rogers?
Mr. ROGERS. Here.
Mrs. HARRIS. Mr. Rutherford?
Mr. RUTHERFORD. Here.
Mrs. HARRIS. Mr. Saylor?
Mr. SAYLOR. Here.
Mrs. HARRIS. Mr. Shuford?
Mr. SHUFORD. Here.
Mrs. HARRIS. Mr. Sisk?
Mr. SISK. Here.
Mrs. HARRIS. Mr. Udall?
(No response.)
Mrs. HARRIS. Mr. Utt?
(No response.)
Mrs. HARRIS. Mr. Westland?
Mr. WESTLAND. Here.
Mrs. HARRIS. Mr. Wharton?
(No response.)
Mrs. HARRIS. Mr. Young?
(No response.)
Mrs. HARRIS. Mr. Engle?
(No response.)
Mr. EDMONDSON. Mr. Chairman, do you have me recorded as present?
Mrs. HARRIS. Yes, sir.
Mr. ASPINALL. Fifteen present. A quorum is present.
Mr. SAYLOR. A parliamentary inquiry, Mr. Chairman.
Mr. ASPINALL. The gentleman will state it.
Mr. SAYLOR. The rules of the House of Representatives, section 153, require all witnesses appearing before the committee to file in advance

written statements of their proposed testimony; the staff of the committee to prepare a digest of the statements to be used by the committee members.

I call the Chair's attention to the fact that until 2 minutes ago none of the members of the committee, to my knowledge, had any of the statements of the 6 witnesses indicated that will appear to testify, and they have not complied with the rules of the House. Since the rules of this committee are the rules of the House, I object to proceeding until the rules have been complied with.

Mr. ASPINALL. The objection is overruled. The Chair rules that the witnesses are in substantial compliance as far as the rules of this committeee are concerned.

Mr. Puls, will you——

Mr. SAYLOR. I again make a point of order that a quorum is not present.

Mr. ROGERS. A parliamentary inquiry, Mr. Chairman.

Mr. EDMONDSON. Rollcall.

Mr. ASPINALL. A rollcall has been requested upon the matter of a quorum. The clerk will call the roll.

Mrs. HARRIS. Mr. Aspinall?

Mr. ASPINALL. Here.

Mrs. HARRIS. Mr. Berry?

(No response.)

Mrs. HARRIS. Mr. Budge?

Mr. BUDGE. Here.

Mrs. HARRIS. Mr. Chenoweth?

(No response.)

Mrs. HARRIS. Mr. Christopher?

(No response.)

Mrs. HARRIS. Mr. Dawson?

Mr. DAWSON. Here.

Mrs. HARRIS. Mr. Diggs?

(No response.)

Mrs. HARRIS. Mr. Emondson?

Mr. EDMONDSON. Here.

Mrs. HARRIS. Mrs. Green?

Mrs. GREEN. Here.

Mrs. HARRIS. Mr. Haley?

Mr. HALEY. Here.

Mrs. HARRIS. Mr. Hosmer?

(No response.)

Mrs. HARRIS. Mr. Metcalf?

Mr. METCALF. Here.

Mrs. HARRIS. Mr. Miller?

(No response.)

Mrs. HARRIS. Mr. O'Brien?

(No response.)

Mrs. HARRIS. Mrs. Pfost?

Mrs. PFOST. Here.

Mrs. HARRIS. Mr. Pillion?

(No response.)

Mrs. HARRIS. Mr. Powell?

(No response.)

Mrs. HARRIS. Mr. Rhodes?

(No response.)
Mrs. HARRIS. Mr. Rogers?
Mr. ROGERS. Here.
Mrs. HARRIS. Mr. Rutherford?
Mr. RUTHERFORD. Here.
Mrs. HARRIS. Mr. Saylor?
Mr. SAYLOR. Here.
Mrs. HARRIS. Mr. Shuford?
Mr. SHUFORD. Here.
Mrs. HARRIS. Mr. Sisk?
Mr. SISK. Here.
Mrs. HARRIS. Mr. Udall?
(No response.)
Mrs. HARRIS. Mr. Utt?
(No response.)
Mrs. HARRIS. Mr. Westland?
Mr. WESTLAND. Here.
Mrs. HARRIS. Mr. Wharton?
(No response.)
Mrs. HARRIS. Mr. Young?
(No response.)
Mrs. HARRIS. Mr. Engle?
Mr. ENGLE. Here.
Mr. ASPINALL. Fifteen members are present. A quorum is present. Now, does the gentleman from Texas have a parliamentary inquiry?
Mr. ROGERS. No parliamentary inquiry now.
Mr. ASPINALL. The Chair would suggest that the members of the committee should stay in the room here if they wish to have a quorum present.
Dr. MILLER. May we not go out to take a smoke?
Mr. ASPINALL. We are not going to have many more long quorum calls.
Dr. MILLER. Just a minute. If you are referring to me——
Mr. ASPINALL. I was not referring to the gentleman.
Dr. MILLER. I had business in my office. I want the gentleman to know that.
Mr. ASPINALL. I was not referring to the gentleman from Nebraska. He knows I was not referring to him. He is not counted in the last quorum.
Dr. MILLER. Or do you refer to the chairman? I know he was working.
Mr. ASPINALL. Proceed, Mr. Puls.

STATEMENT OF LOUIS G. PULS, HEAD OF THE DESIGN SECTION, BUREAU OF RECLAMATION, DENVER, COLO.

Mr. PULS. Mr. Chairman and members of the committee, my name is Louis G. Puls. I am head of the Design Section of the Bureau of Reclamation, Denver, Colo.
I have been invited here to present basic data on this project and give a description of the project.
Mr. HALEY. Mr. Chairman, I suggest the gentleman be allowed to be seated.

Mr. ASPINALL. I think Mr. Puls will be seated as soon as he gets through with his introduction.

Mr. PULS. I have a statement covering the design phases and description of the proposed Hells Canyon project, which with your permission I will submit for the record. I will endeavor to summarize it very briefly.

The statement is composed to furnish pertinent data in the preface for convenient reference such as general hydrology, reservoir, dam, spillways, river outlets, and powerplant. Then follows comments on design considerations and descriptions of the facilities.

The Hells Canyon Dam site is located on the Snake River about 108 river-miles upstream from Lewiston, Idaho, and about 80 river-miles downstream from Huntington, Oreg. From Huntington to Lewiston, the Snake River flows through a narrow very rugged canyon. The river elevation at the dam site is approximately 1,470 feet, but the peaks of the Wallowa Mountains on the west of the river and the Seven Devils Mountains to the east reach elevations of 8,000 feet.

Mr. WESTLAND. Mr. Chairman, I have here before me the testimony of Mr. Puls. I must confess I am unable to follow the statement that he is giving in this prepared statement. Are they two separate statements?

Mr. PULS. Yes, I am trying to describe——

Mr. WESTLAND. May we have a copy of the statement he is making?

Mr. ASPINALL. As I understand the procedure, Mr. Westland, the statement is filed and then the witness is permitted to make an oral statement.

Mr. WESTLAND. In other words, what we have before us here is not the statement, although it says it is the testimony presented by Mr. Puls?

Mr. ASPINALL. As I understand it, what he is testifying to orally is all included within his testimony that he has in his statement. Is that right, Mr. Puls?

Mr. PULS. That is right.

Mr. ASPINALL. That is what I understand. You may proceed.

Mr. McFarland, where is the statement of Mr. Puls? Do we have that?

Mr. MCFARLAND. Yes.

Mr. ASPINALL. Proceed.

Mr. PULS. With your permission, I would like to point out on this map the location of the Hells Canyon dam site, which is here [indicating].

Mr. ASPINALL. First, identify your map, Mr. Puls.

Mr. PULS. This map is entitled "Snake River Project Area," prepared by the Bureau of Reclamation at Boise, Idaho.

The Snake River is indicated by the heavy blue line. It joins the Columbia at this point [indicating]. Here is noted Boise. The Hells Canyon dam site is noted at this point with the red circle, located about 108 river miles upstream from Lewiston and about 80 miles downstream from Huntington, Oreg., which is not shown on this map. It is about at this point [indicating].

The Hells Canyon of the Snake River offers an excellent site for a high concrete dam. The canyon has been eroded in a thick series of layers of lava flows which are predominantly basalt. These lavas have been altered by heat and great pressure into a very hard and

dense rock which affords a competent foundation for the proposed structure.

The proposed dam will be similar in many respects to Hoover Dam on the Colorado River. Hells Canyon Dam will be 722 feet high, above the low point of the foundation. This is within 4 feet of the height of Hoover Dam. Hells Canyon will have a hydraulic height of 602 feet, from the maximum water surface in the reservoir to the water surface in the tailrace below the dam. In this respect, Hells Canyon Dam exceeds Hoover Dam by 28 feet.

Other dimensions of Hells Canyon are length of crest, 1,733 feet, thickness at top, 45 feet, thickness at base, 426 feet. The volume of concrete in the dam will be about 5,100,000 cubic yards and about 4 million barrels of cement will be required in its construction.

The construction methods and techniques which were developed originally in connection with the design and construction of Hoover Dam and subsequently used and improved upon at Grand Coulee, Shasta, Hungry Horse, and other large dams will be applied on the Hells Canyon Dam.

The mass concrete will be artifically cooled to remove the heat generated by the setting reaction of the cement. After the individual blocks have been cooled and they have contracted, the joints between adjacent blocks will be filled by cement grout applied under pressure.

The end product will be a solid watertight monolithic structure free from shrinkage cracks. As a result of the knowledge and data obtained from Hoover and other dams, the designers are now able to use higher working stresses with confidence. The use of these higher stresses in Hells Canyon Dam will effect a savings of over 1 million cubic yards of concrete. The substitution of pobbolan for part of the cement will further reduce the cost of the structure.

During the construction of the dam, the river will be diverted around the dam site through two 50-foot diameter diversion tunnels, one on each side of the river. The diversion works will have a capacity of 100,000 cubic feet per second.

Floods of that magnitude may be expected to occur at a frequency of once in 25 years.

Two spillways, one on each end of the dam having a combined capacity of 300,000 cubic feet per second will protect the dam and powerplant from floods. The powerplant will be located on the downstream toe of the dam, and will be designed for 9 generating units of 100,000 kilowatts capacity, each making the total ultimate installed capacity 900,000 kilowatts. These generating units will be similar to those in operation at Hoover and Shasta and Hungry Horse Dams.

The construction program for this project is predicated upon our actual experience at Hoover and Hungry Horse Dams. It provides for completion of the project in 6¾ years. Power from the first generating unit will be available in about 4½ years after start of excavation of the diversion tunnels.

That completes my summary, Mr. Chairman, of the statement that I had prepared.

Mr. EDMONDSON. Mr. Chairman, I move for the convenience of the committee that the statements which I understand are in possession of the clerk for the other five witnesses this morning be filed

and made a part of the record here and now and made available to the members of the committee.

Mr. ASPINALL. You have heard the motion.

Mrs. PFOST. Second.

Mr. ASPINALL. The motion is seconded. All those in favor of the motion——

Mr. SAYLOR. I would like to be heard in opposition to it.

Mr. ASPINALL. The gentleman has the right to comment.

Mr. Saylor.

Mr. SAYLOR. You are faced here with a proposition that this project, according to the lowest estimates which the Bureau has put in, will be about $375 million. The gentleman who made the motion and the lady who seconded it were not Members of the Congress when these matters were considered in the 82d Congress. To the best of my knowledge, unless there have been some private hearings, members of the committee outside of 2 on the Democratic side and 4 on the Republican side have not heard any witness pro or con on this subject. If this committee is to act on this matter as it has tried to act on all other controversial matters which have come before us and give a full and complete hearing, it is impossible for members to understand what is involved under the procedure which has been recommended by the gentleman——

Mr. ROGERS. Will you yield for a parliamentary inquiry?

Mr. SAYLOR. No. If the motion of the gentleman from Oklahoma is put into effect.

If it is only for the purpose of having a rump session that we have gathered here, which is very evident that might be the motive of some of the individuals—and there is no doubt that those on the majority side have the votes that they can do what they desire. However, it comes with poor grace, in my opinion, to void the rules of the House and not allow the members to question the witnesses who come before us on this highly controversial matter.

Dr. MILLER. Will the gentleman yield?

Mr. SAYLOR. I will be happy to yield.

Dr. MILLER. Mr. Chairman, it bothers me a little bit. I read in the letter to the Senate committee that the Department of the Interior is not endorsing this project, and I think you said in your opening statement, Mr. Puls, that you were here at invitation, here at the taxpayers' expense to testify for or against Hells Canyon. Are you following the wishes of the Bureau of Reclamation of the Interior Department or following your own wishes?

Mr. METCALF. A point of order, Mr. Chairman.

Dr. MILLER. I am going to have to find out whether you are representing the Department of Interior.

Mr. METCALF. A point of order.

Dr. MILLER. The Department of the Interior or representing yourselves and are here at the taxpayers' expense against their wishes. That is the one thing I think is very important.

Mrs. GREEN. Mr. Chairman?

Mr. ASPINALL. The Chair recognizes the gentleman from Montana on his point of order.

Mr. METCALF. My point of order is that the gentleman from Nebraska is not speaking on the motion that was made.

Dr. MILLER. I will concede to the point of order. I will raise the question before the session is over and I want a direct answer.

Mr. ASPINALL. The gentleman from Pennsylvania has the time.

Dr. MILLER. Will the gentleman yield again?

Mr. SAYLOR. Yes.

Dr. MILLER. I think you are right in asking that the Bureau witnesses give their testimony. I think the testimony ought to be here on our desks. Then I would like to know if the Bureau of Reclamation people in that territory makes recommendations which are contrary to the Interior Department in Washington. Can we have their testimony.

Mrs. GREEN. Mr. Chairman?

Mr. ASPINALL. The time of the gentleman from Pennsylvania has expired.

Mrs. GREEN. I move the previous question.

Mr. ASPINALL. Motion has been made for the previous question. All those in favor signify by saying "Aye."

Those opposed say "No."

The ayes have it and the previous question is ordered.

All those in favor of the motion of the gentleman from Oklahoma, Mr. Edmondson, signify by saying "Aye."

Those opposed say "No."

The ayes have it and the motion is carried, and it is so ordered.

(The statements referred to follow:)

BASIC DATA AND INFORMATION ON FACILITIES RELATING TO THE PROPOSED HIGH HELLS CANYON DAM AND POWERPLANT ON SNAKE RIVER

Testimony presented at congressional subcommittee hearing beginning July 11, 1955, by L. G. Puls, engineer, commissioner's office, Denver, Colo., United States Department of the Interior, Bureau of Reclamation

PERTINENT DATA

1. *General.*—
Name: Hells Canyon Dam
Stream: Snake River
Stream mile (from mouth): 247.3
Maximum annual runoff (Oxbow, 1943): 19,750,000 acre-feet
Minimum runoff (Oxbow, 1931): 8,080,000 acre-feet
Maximum known flood (Oxbow, June 1894): 130,000 cubic feet per second
Maximum flood (period of record, May 1921): 90,500 cubic feet per second
Minimum flow of record (Oxbow, August 1924): 4,890 cubic feet per second
Drainage area: 74,000 square miles
Tail-water elevation (adopted for power-head calculation): 1,475
Construction diversion capacity: 100,000 cubic feet per second

2. *Reservoir.*—
Maximum retained pool elevation: 2,077
Minimum flood-control pool elevation: 1,923
Minimum power pool elevation: 1,788
Total storage: 4,400,000 acre-feet
Active storage: 3,880,000 acre-feet

3. *Dam.*—
Type: Concrete arch
Maximum height. Approximately 722 feet
Elevation crest of dam: 2,082
Crest length: 1,733 feet
Radius of upstream face: 950 feet
Mass concrete: Approximately 5,100,000 cubic yards

4. *Spillways.*—
Design capacity: 300,000 cubic feet per second
Type: Two 42-foot-diameter tunnels with intake gates

Fixed crest elevation: 2,018
Spillway gates: Four radial gates 48 feet by 59 feet
5. *River outlets.*—
Capacity: 40,000 cubic feet per second
Number: Eight 96-inch hollow-jet valves
Intake elevation: 1,770
Discharge elevation: 1,520
Outlet pipes: Two 16-foot diameter
6. *Powerplant.*—
Generator capacity (ultimate): Nine 100,000-kilowatt units
Generator capacity (initial): Eight 100,000-kilowatt units
Maximum power head: 602 feet
Design head: 475 feet
Minimum head: 313 feet
Flow per unit: 3,015 cubic feet per second
Penstocks: Nine 14-foot diameter
Penstock intake elevation: 1,770

7. *Topography.*—United States Engineers drawing No. SP–1–11, entitled "Hells Canyon Dam Site, Snake River, Oregon-Idaho." Scale 1 inch equals 100 feet, contour interval 10 feet, dated November 1941.

8. *Selection of site.*—Several factors have entered into the decision to select the Deep Creek site as the most logical location for construction of the dam. On the basis of a comparative cost estimate made for a dam at the Monolith site, about 3 miles upstream from Deep Creek, it became evident that the Deep Creek site was not only the more favorable from a construction-cost viewpoint, but also more favorable from a viewpoint of greater power earnings because of a 25-foot greater power head. The Deep Creek site also offered a more uniform profile and topography more suited to spillway structures. A reconnaissance examination was made of a possible site about three-fourths mile downstream from Dep Creek, but this site is wider and does not possess any geologic advantage over the Deep Creek site.

9. *General structural dimensions of dam and powerplant.*—The top of the dam will be at elevation 2,082 or about 722 feet above the present known lowest point of the foundation. This height is comparable to the 726-foot height of Hoover Dam. The hydraulic height between reservoir and tail water surfaces will be 602 feet as compared to 574 feet for Hoover Dam. The crest length of the dam will be about 1,733 feet, the top thickness 45 feet, and the maximum thickness at the base about 426 feet.

The powerhouse will have a length of approximately 600 feet, a maximum width of 150 feet, and a height of 150 feet above the generator floor; the bottom of the draft tubes will be approximately 66 feet below the generator floor. The maximum height of the structure above the deepest point of the excavated river channel will be about 216 feet, including the mass concrete under the draft tubes. It will be founded directly on bedrock at a short distance downstream from the dam.

10. *Geology.*—At the dam site, and for several miles upstream and downstream, the Snake River Canyon has been eroded in a thick series of ancient lava flows, predominantly basalt. Metamorphism, by pressure and heat of deep burial, has altered the original physical character of these lavas and greatly improved the rock from the engineering viewpoint. The rock is very hard, dense, and resistant to weathering, factors which account for the steep and rugged character of the gorge, and assure excellent foundation and abutment conditions.

The region is geologically stable, a condition favorable to the construction of a high concrete dam. Geological investigations to date have not revealed any major faults in the dam foundation although the alinement of Deep and Short Creeks, immediately upstream from the axis, suggests that their courses may be controlled by a strong shear zone or fault. The presence of this weakness would have no adverse effect on the foundation conditions, although its presence or absence should be proved before the diversion tunel is constructed.

The foundation and abutment rock has a number of joint systems and local sheeting, which causes some narrow zones or slots to erode more rapidly than the remainder of the gorge walls. It is believed that the joints are tight; however, the standard grouting treatment of dam foundations will be used to prevent leakage past the dam in the event there are some unknown open joints.

Investigations of the condition of the rock in the foundation of the dam and powerplant have consisted of the following exploratory work:

(*a*) Ten vertical diamond-drill holes in the river.

(*b*) Four inclined diamond-drill holes, drilled to cross under the river to explore the jointing and the width of an intrusive dike of basalt.

(*c*) Two diamond-drill holes in a considered underground powerplant site on the right canyon side downstream from the dam site.

(*d*) Four 6-inch-diameter holes in the dam-site foundations for extracting cores for laboratory testing.

(*e*) Two exploratory adits or tunnels in the dam-site abutments for viewing the condition of foundation rock in place.

(*f*) One exploratory adit from which 2 crosscuts were driven to explore the rock in the 2 most prominent surface depressions which cut diagonally through the dam site.

The results of the drilling in the river channel and on the banks give an adequate picture of the general character of the bedrock. Further exploration will be necessary to secure additional data for final design specifications. The logs of the drill holes in the river show water depths of as much as 40 feet, detritus deposits as thick as 91 feet, and a maximum depth to bedrock of 109 feet below river level, although localized pockets may go somewhat deeper. The rock bottom is sound jointed basalt, intersected by a narrow intrusive dike of olivine basalt that extends diagonally through the site and up the left canyon wall downstream; the dike rock is comparable to the main body of basalt in hardness and soundness. The sides of the gorge and the abutments of the proposed dam are clean and unweathered, except for talus accumulations in a few narrow crevices and at 1 or 2 debris fans. The geologic investigations and studies have proved that the site is unquestionably excellent and entirely suitable for construction on it of the proposed high and massive dam.

Within the reservoir area, the Columbia River lava flows appear near river level some 30 or 40 miles upstream of the dam site. While this lava probably contains interflow strata less solid than the body of the flows, no leakage through these strata in the reservoir basin is expected.

11. *Design of dam.*—The concrete arch type of dam was selected because it was more economical than any other type considered adaptable to this site. The dam will require placement of about 5,100,000 cubic yards of mass concrete although this figure may be expected to vary a little, depending upon final determination of the bedrock surface. Cement and pozzolanic material requirements for this mass and other concrete placement may be about 4,200,000 barrels. (Pozzolanic materials are substituted for a portion of the cement and are obtained from volcanic ashes, tuffs, pumicite, siliceous sedimentary rocks, burnt clays and shales, and industrial byproducts such as slag and fly ash.)

Placement of the mass concrete by modern methods and construction speed will require that the concrete-setting temperatures be controlled by cooling methods. This will be accomplished by placing layers of 1-inch outside-diameter pipe tubing 5 feet apart throughout the mass of the dam and circulating through them either natural river water, if cool enough, or water cooled by some sort of refrigerant such as brine. In addition to the cooling procedure for the control of cracking, the dam will be constructed with a system of vertical transverse joints spaced about 70 feet apart along the upstream face and a system of vertical staggered joints parallel to the upstream face, spaced about 120 or 180 feet apart. Shrinkage of the concrete, as it cools, due to the dissipation of setting heat, will open these joints. To make the dam monolithic in its elastic behavior, these joint openings will be filled with grout from an embedded pipe system after the average temperature of the dam has been reduced to mean annual temperature or below.

Concrete stresses have been computed on the basis of radial distribution of loadings, including earthquake shocks, between the horizontal arch elements and the vertical cantilever elements. The effects of tangential shears and twisting action have not been computed, but are not expected to indicate stress concentrations that would exceed allowable limits.

12. *Spillway.*—It has been estimated that floods as great as 300,000 cubic feet per second are possible of occurrence at a time when the reservoir is full. The designs for bypassing the dam and powerplant with this water consist of releasing the flood waters through two 48-foot-wide by 59-foot-high radial gates at each end of the dam. Discharges through each pair of gates will flow into an inclined spillway tunnel connected to the downstream half of a previously used river-diversion tunnel. Each of the 2 spillway tunnels, 1 in each abutment, will be concrete lined, the downstream or horizontal portions being 42 feet in diameter. The combined length of the 2 spillway tunnels will be about 4,800 feet. Flood-

waters will be returned to the river about 1,600 feet downstream from the powerplant, thus assuring no interference with or interruptions of power production. Control for operation of the gates will be both automatic and manual and operating personnel at the dam will have quick and easy access to them from powerplant offices and shops by means of elevators constructed in the dam.

13. *Outlet works.*—Provisions for supplying downstream river demands of as much as 40,000 cubic feet per second in the event power water releases are insufficient have been planned for. The scheme consists of a 16-foot-diameter outlet pipe in a tunnel in each abutment. Entrance to these pipes would be through openings in the dam and each would be gated with 20.65- by 20.65-foot fixed-wheel gate. Discharge from each pipe would be through a set of four 96-inch hollow-jet valves into the river about 500 feet downstream from the powerplant.

14. *Diversion works.*—A major feature in the construction of the dam and powerplant will be the diverting of the river so that excavation of river-fill material and shaping of abutments and placement of concrete can be accomplished. It is expected that when fully excavated to bedrock, the depth would be at least 110 feet below normal river level and 205 feet below the top of the upstream cofferdam.

Diversion would be provided for floods up to 100,000 cubic feet per second in magnitude by excavating a 50-foot-diameter tunnel about 4,300 feet long in the rock of each abutment around the dam site. The rock and its structure is believed to be of such quality that little or no lining with concrete will be necessary. Each tunnel would have a 50- by 50-foot bulkhead gate at its entrance and a 42- by 42-foot bulkhead gate at its outlet, for shutting out river water during construction of tunnel plugs in them at the bottom of the inclined part of the spillway tunnels. High-pressure slide gates would be installed in each plug to permit meeting downstream river demands during the filling of the reservoir up to or above the entrances to the outlet works.

Flow from Deep Creek, on the Idaho side of the river, would discharge into the cofferdam area unless controlled otherwise. It is planned that this flow, estimated to possibly peak at 4,500 cubic feet per second, would be diverted into the Idaho diversion tunnel by means of a 15-foot-diameter bellmouthed shaft and tunnel from the Deep Creek stream bed. A small dam would be constructed in the creek to effect the diversion.

Flow from Short Creek, also known as Deadman Creek, on the Oregon side of the river also would discharge into the cofferdam area. The discharge is estimated to vary from near 0 to possibly 575 cubic feet per second and could either be flumed around the canyon wall to empty into the river upstream from the upstream cofferdam or else could be pumped thereto.

15. *Facilities for delivery of power water.*—Water for operating the turbines would be taken directly through the dam from the reservoir in individual 14-foot-diameter penstock pipes to 8 installed units and 1 future unit. Fixed-wheel gates would be used at the entrance to the penstocks at elevation 1,770, which is 307 feet below maximum operating water surface. Trash racks would be constructed for each penstock.

16. *Construction schedule.*—The program of construction for Hells Canyon Dam and powerplant has been worked out in preliminary form. This schedule involves the following assumptions:

(*a*) Construction will begin April 1 of the first fiscal year and be completed by the end of the seventh fiscal year.

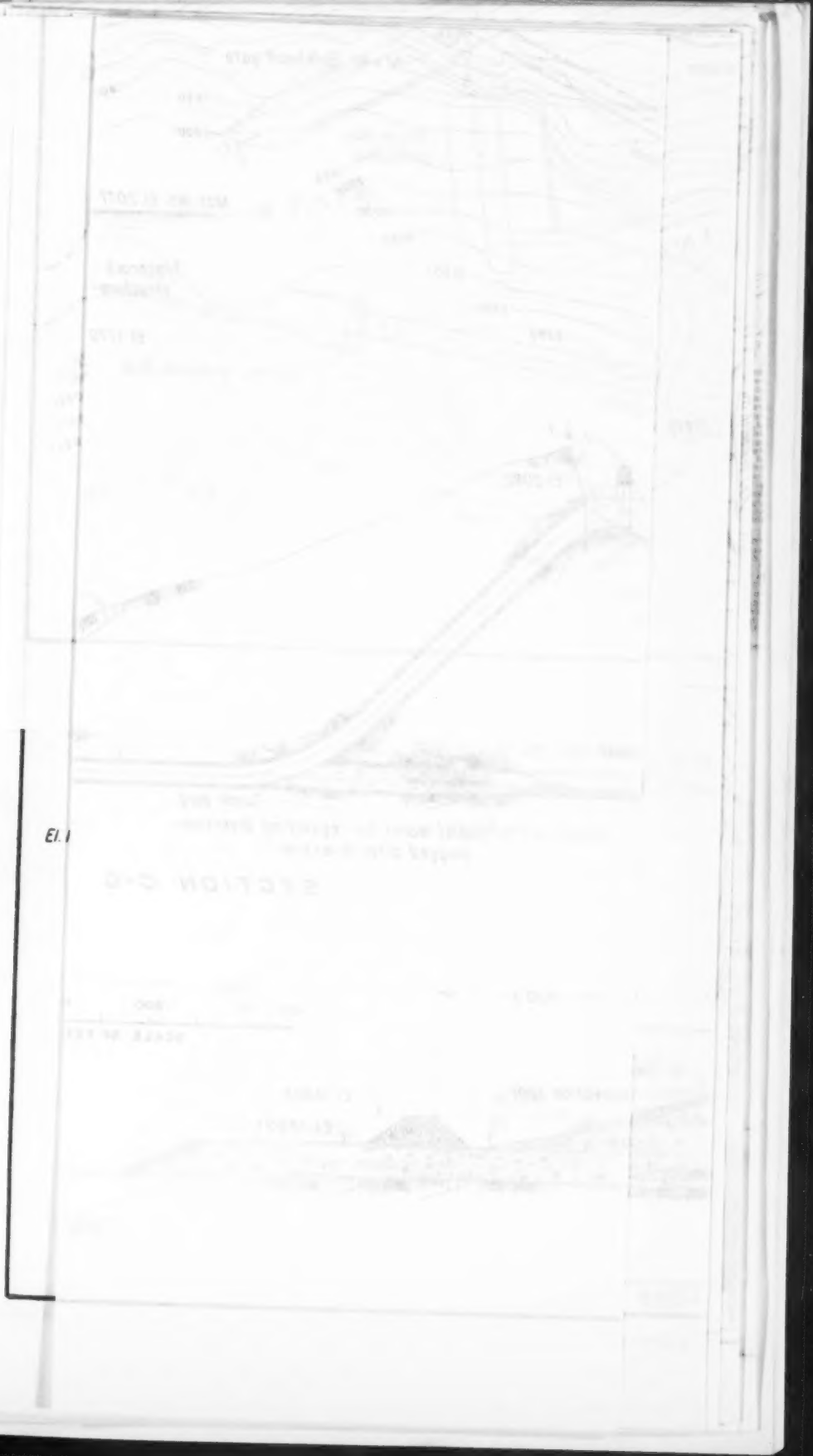
(*b*) First generator will be placed on the line September 1 of the sixth fiscal year which will be 4½ years after start of diversion-tunnel excavation.

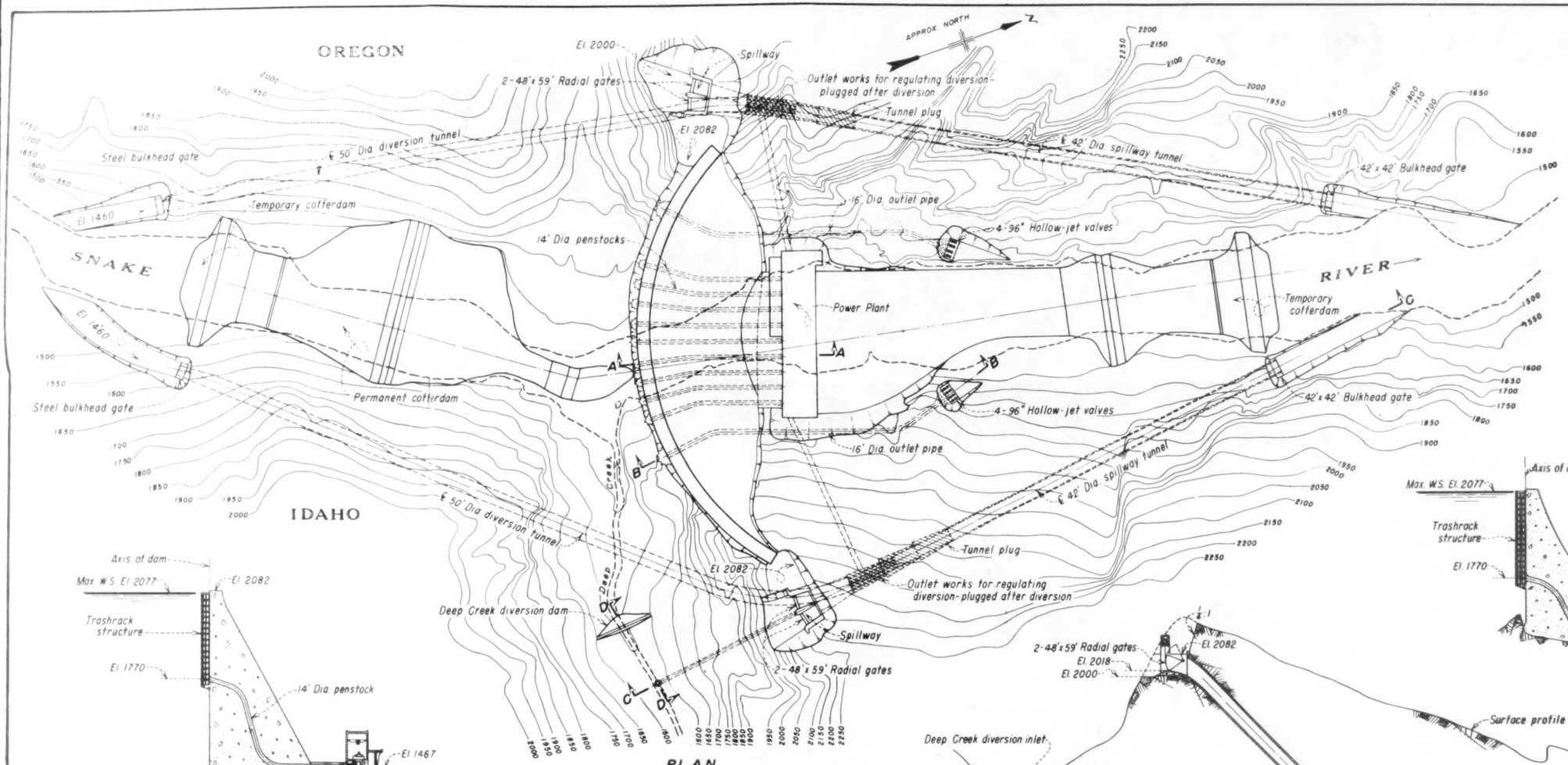
(*c*) Remaining generators will be placed on the line in 3-month intervals.

STATEMENT OF SPECIALTIES OF C. I. HOISINGTON, CHIEF, ESTIMATES AND ANALYSES BRANCH, DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION—INVESTIGATION, DESIGN, AND ESTIMATING COST OF HELLS CANYON PROJECT

I am Chief of the Estimates and Analyses Branch, Construction Division in the Commissioner's Office, Denver, Colo.

In this capacity, I am responsible for the preparation, review, and approval of construction cost estimates for the various features of Bureau projects such as dams, powerplants, pumping plants, transmission systems, canals, conduit, and all other classes of property, including costs of materials, equipment, and installation labor. I am also responsible for preparing, issuing, and maintaining cost indexes for construction work and for reviewing of project planning reports with emphasis on costs and engineering economy and checking them against omission of features and essential work.

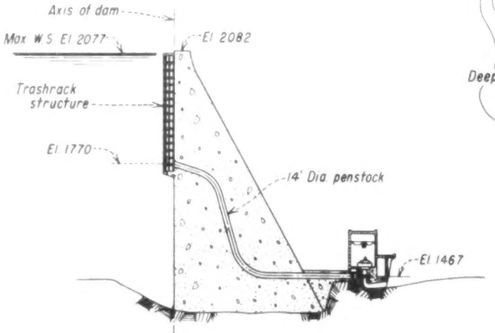




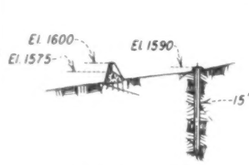
PLAN

LOCATION MAP

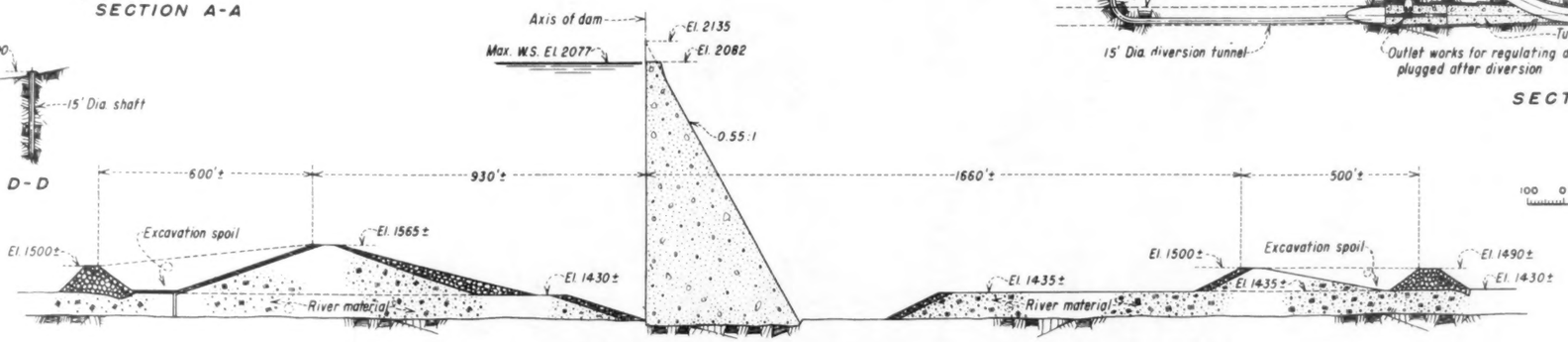
10 0 10 20 30 40 50
SCALE OF MILES



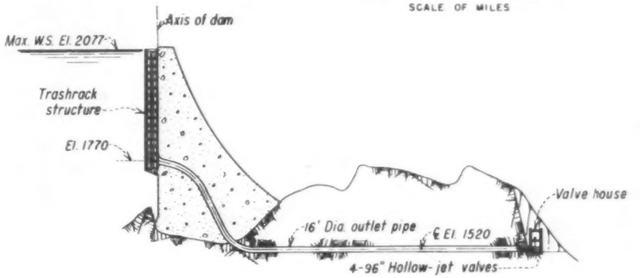
SECTION A-A



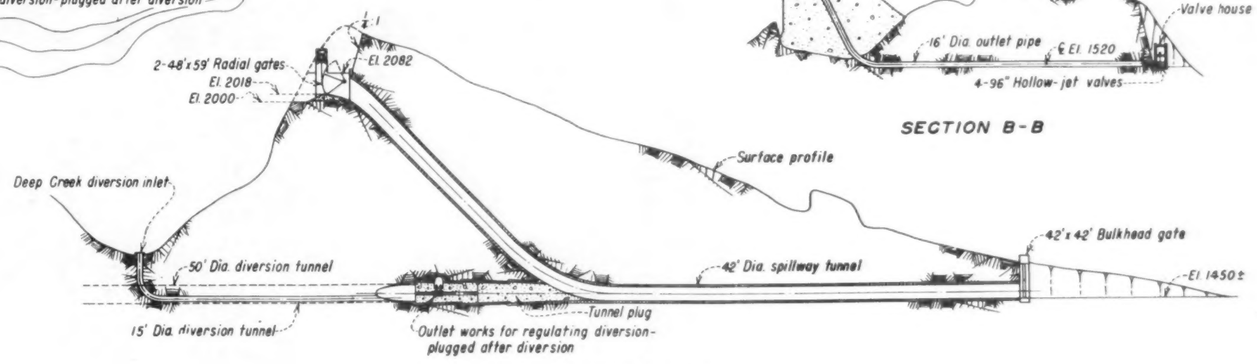
SECTION D-D



SECTION ON LINE OF CENTERS



SECTION B-B



SECTION C-C

100 0 200 400 600
SCALE OF FEET

STUDY A-9

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

SNAKE RIVER PROJECT-IDAHO-OREGON

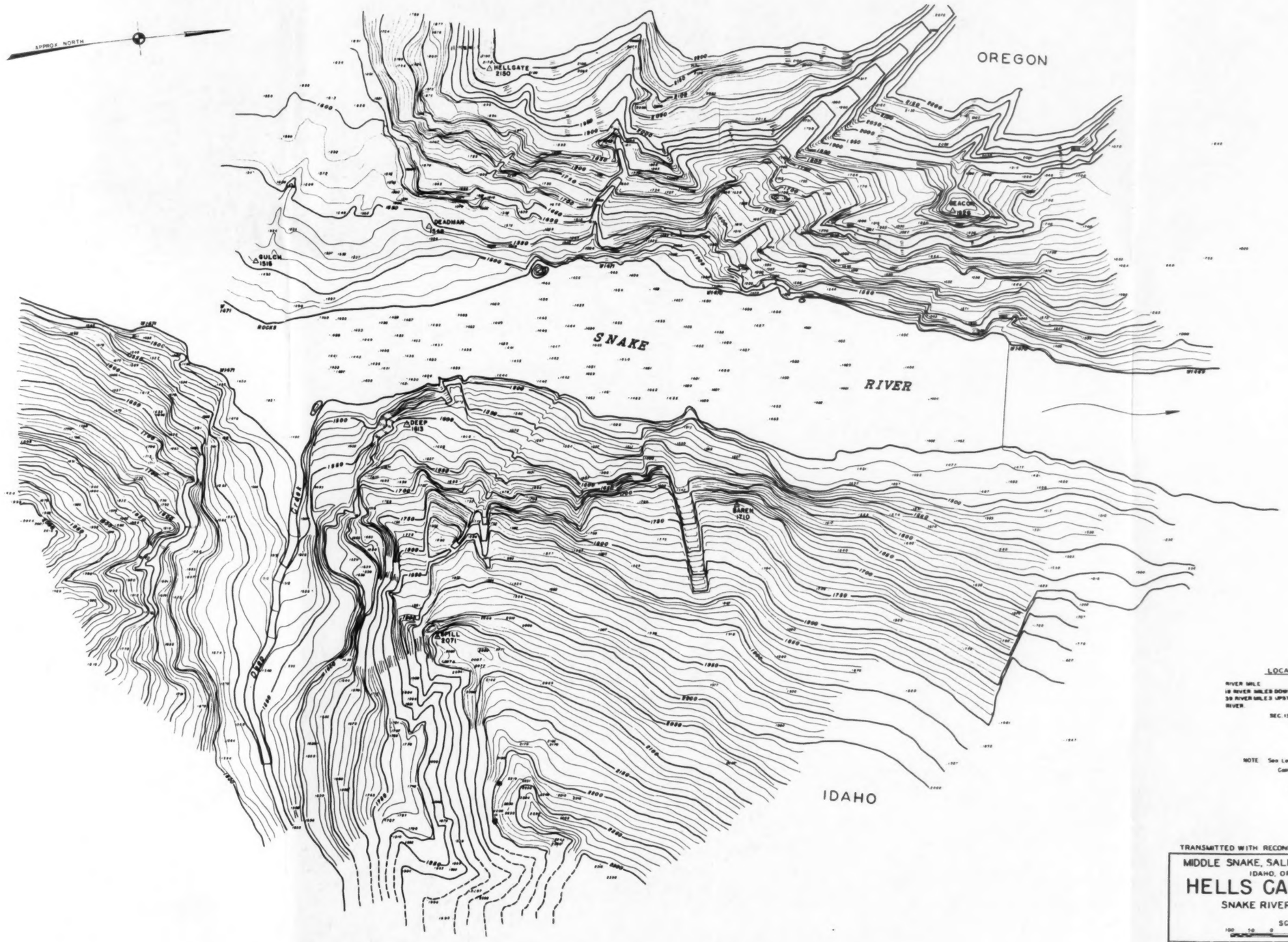
HELLS CANYON DAM

PLAN AND SECTIONS
RECONNAISSANCE ESTIMATE DRAWING

DENVER, COLORADO, AUG. 3, 1951

550-D-27

67129 O - 56 (Face p. 26) No. 1



LOCATION OF SITE

RIVER MILE 247.0
18 RIVER MILES DOWNSTREAM FROM HOMESTEAD, ORE
39 RIVER MILES UPSTREAM FROM MOUTH OF SALMON RIVER

SEC 19, T 22 N, R 5 W

NOTE Sea Level Datum of 1929 (Unadjusted)
Contour Interval 10 Feet

November 1941

TRANSMITTED WITH RECONNAISSANCE REPORT DATED APRIL 15, 1942

MIDDLE SNAKE, SALMON & CLEARWATER RIVERS
IDAHO, OREGON & WASHINGTON

HELLS CANYON DAM SITE

SNAKE RIVER, OREGON-IDAHO

SCALE IN FEET

U.S. ENGINEER OFFICE, PORTLAND, OREGON, DISTRICT

PLATE XII

SP-1-11

67129 O - 56 (Face p. 26) No. 2

SNAKE

RIVER

D.H.7

D.H.6

BARREN

D.H.13

D.H.5

D.H.14

D.H.12

D.H.15

D.H.11

D.H.16

D.H.10

D.H.8

D.H.2

D.H.1

D.H.3

D.H.4

D.H.20

D.H.19

DEEP

SPILLWAY

TUNNEL NO.1

TUNNEL NO.2

TUNNEL NO.3

BEACON

HELLGATE

GULCH

E 91,000

E 90,800

E 90,000

E 49,800

N 93,000

N 92,600

N 92,000

N 91,800

N 90,000

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

HELLS CANYON PROJECT, IDAHO-OREGON
GEOLOGIC INVESTIGATIONS

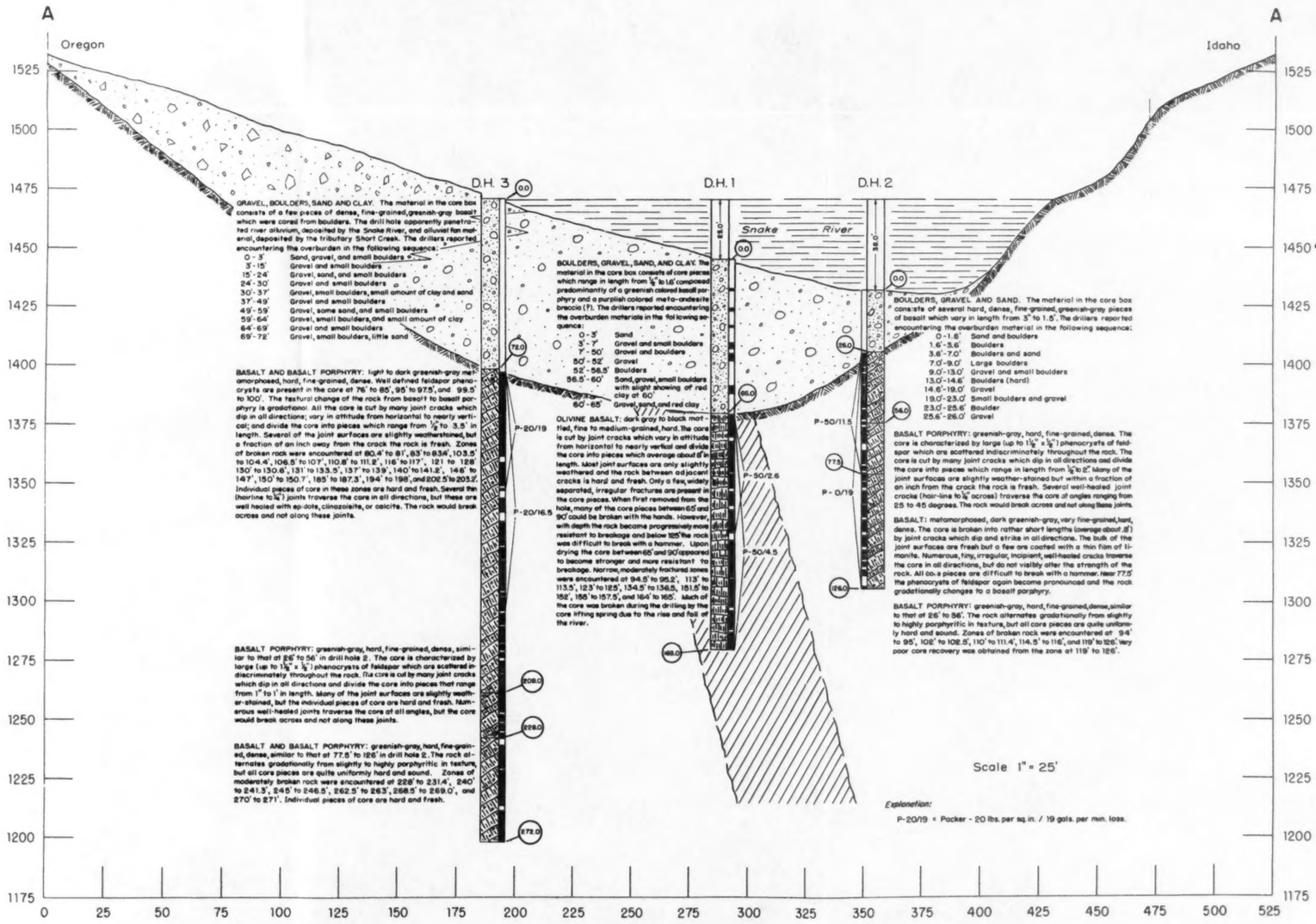
DRAWN ..... SUBMITTED ... W. H. Logan

TRACED ..... RECOMMENDED .....

CHECKED ..... APPROVED ... C. J. Olson

BOISE, IDAHO

67129 O - 56 (Face p. 26) No. 3


A
Oregon
Idaho
A
1525
1500
1475
1450
1425
1400
1375
1350
1325
1300
1275
1250
1225
1200
1175
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
525
D.H. 3
D.H. 1
D.H. 2
Snake River
GRAVEL, BOULDERS, SAND AND CLAY. The material in the core box consists of a few pieces of dense, fine-grained, greenish-gray basalt which were cored from boulders. The drill hole apparently penetrated river alluvium, deposited by the Snake River, and alluvial fan material, deposited by the tributary Short Creek. The drillers reported encountering the overburden in the following sequence:
0 - 3' Sand, gravel, and small boulders
3 - 15' Gravel and small boulders
15 - 24' Gravel, sand, and small boulders
24 - 30' Gravel and small boulders
30 - 37' Gravel, small boulders, small amount of clay and sand
37 - 49' Gravel and small boulders
49 - 59' Gravel, some sand, and small boulders
59 - 64' Gravel, small boulders, and small amount of clay
64 - 69' Gravel and small boulders
69 - 72' Gravel, small boulders, little sand
BASALT AND BASALT PORPHYRY: light to dark greenish-gray metamorphosed, hard, fine-grained, dense. Well defined feldspar phenocrysts are present in the core at 76' to 85', 95' to 97.5', and 99.5' to 100'. The textural change of the rock from basalt to basalt porphyry is gradational. All the core is cut by many joint cracks which dip in all directions; vary in attitude from horizontal to nearly vertical; and divide the core into pieces which range from 1/2" to 3.5" in length. Several of the joint surfaces are slightly weather-stained, but a fraction of an inch away from the crack the rock is fresh. Zones of broken rock were encountered at 80.4' to 81', 83' to 83.6', 103.5' to 104.4', 106.5' to 107', 110.8' to 111.2', 116' to 117', 121 to 128', 130' to 130.8', 131' to 133.5', 137' to 139', 140' to 141.2', 142' to 147', 150' to 150.7', 185' to 187.5', 194' to 198', and 202.5' to 203.2'. Individual pieces of core in these zones are hard and fresh. Several thin (hairline to 1/4") joints traverse the core in all directions, but these are well healed with epidote, clinozoisite, or calcite. The rock would break across and not along these joints.
BASALT PORPHYRY: greenish-gray, hard, fine-grained, dense, similar to that at 26' to 56' in drill hole 2. The core is characterized by large (up to 1 1/2" x 1/2") phenocrysts of feldspar which are scattered indiscriminately throughout the rock. The core is cut by many joint cracks which dip in all directions and divide the core into pieces that range from 1" to 1' in length. Many of the joint surfaces are slightly weather-stained, but the individual pieces of core are hard and fresh. Numerous well-healed joints traverse the core of all angles, but the core would break across and not along these joints.
BASALT AND BASALT PORPHYRY: greenish-gray, hard, fine-grained, dense, similar to that at 77.5' to 126' in drill hole 2. The rock alternates gradationally from slightly to highly porphyritic in texture, but all core pieces are quite uniformly hard and sound. Zones of moderately broken rock were encountered at 228' to 231.4', 240' to 241.3', 245' to 246.5', 262.5' to 263', 268.5' to 269.0', and 270' to 271'. Individual pieces of core are hard and fresh.
BOULDERS, GRAVEL, SAND, AND CLAY. The material in the core box consists of core pieces which range in length from 1/2" to 16" composed predominantly of a greenish colored basalt porphyry and a purplish colored meta-andesite breccia (?). The drillers reported encountering the overburden materials in the following sequence:
0 - 3' Sand
3' - 7' Gravel and small boulders
7' - 50' Gravel and boulders
50' - 52' Gravel
52' - 56.5' Boulders
56.5' - 60' Sand, gravel, small boulders with slight showing of red clay at 60'
60 - 65' Gravel, sand, and red clay
OLIVINE BASALT: dark gray to black mottled, fine to medium-grained, hard. The core is cut by joint cracks which vary in attitude from horizontal to nearly vertical and divide the core into pieces which average about 8" in length. Most joint surfaces are only slightly weathered and the rock between adjacent cracks is hard and fresh. Only a few, widely separated, irregular fractures are present in the core pieces. When first removed from the hole, many of the core pieces between 65' and 90' could be broken with the hands. However, with depth the rock became progressively more resistant to breakage and below 125' the rock was difficult to break with a hammer. Upon drying the core between 65' and 90' appeared to become stronger and more resistant to breakage. Narrow, moderately fractured zones were encountered at 94.5' to 95.2', 113' to 113.5', 123' to 125', 134.5' to 136.5', 151.5' to 152', 155' to 157.5', and 164' to 165'. Much of the core was broken during the drilling by the core lifting spring due to the rise and fall of the river.
BOULDERS, GRAVEL AND SAND. The material in the core box consists of several hard, dense, fine-grained, greenish-gray pieces of basalt which vary in length from 3" to 1.5'. The drillers reported encountering the overburden material in the following sequence:
0 - 1.6' Sand and boulders
1.6' - 3.6' Boulders
3.6' - 7.0' Boulders and sand
7.0' - 9.0' Large boulders
9.0' - 13.0' Gravel and small boulders
13.0' - 14.6' Boulders (hard)
14.6' - 19.0' Gravel
19.0' - 23.0' Small boulders and gravel
23.0' - 25.6' Boulder
25.6' - 26.0' Gravel
BASALT PORPHYRY: greenish-gray, hard, fine-grained, dense. The core is characterized by large (up to 1 1/2" x 1/2") phenocrysts of feldspar which are scattered indiscriminately throughout the rock. The core is cut by many joint cracks which dip in all directions and divide the core into pieces which range in length from 1/2" to 2'. Many of the joint surfaces are slightly weather-stained but within a fraction of an inch from the crack the rock is fresh. Several well-healed joint cracks (hair-line to 1/4" across) traverse the core at angles ranging from 25 to 45 degrees. The rock would break across and not along these joints.
BASALT: metamorphosed, dark greenish-gray, very fine-grained, hard, dense. The core is broken into rather short lengths (average about 8") by joint cracks which dip and strike in all directions. The bulk of the joint surfaces are fresh but a few are coated with a thin film of limonite. Numerous, tiny, irregular, incipient, well-healed cracks traverse the core in all directions, but do not visibly alter the strength of the rock. All core pieces are difficult to break with a hammer. Near 77.5' the phenocrysts of feldspar again become pronounced and the rock gradationally changes to a basalt porphyry.
BASALT PORPHYRY: greenish-gray, hard, fine-grained, dense, similar to that at 26' to 56'. The rock alternates gradationally from slightly to highly porphyritic in texture, but all core pieces are quite uniformly hard and sound. Zones of broken rock were encountered at 94' to 95', 102' to 102.5', 110' to 111.4', 114.5' to 116', and 119' to 126'. Very poor core recovery was obtained from the zone at 119' to 126'.
P-20/19
P-20/16.5
P-50/11.5
P-50/2.6
P-50/4.5
P-0/19
72.0
95.0
168.0
208.0
228.0
272.0
77.5
126.0
Scale 1" = 25'
Explanation:
P-20/19 = Packer - 20 lbs. per sq. in. / 19 gals. per min. loss.
LEGEND
Talus and Slope Wash
Gravel, Boulders and Sand
Olivine Basalt Dike
Basalt
Basalt Porphyry

Preliminary Geologic Section Across Bottom of Snake River Canyon Through Drill Holes 3, 1, and 2

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

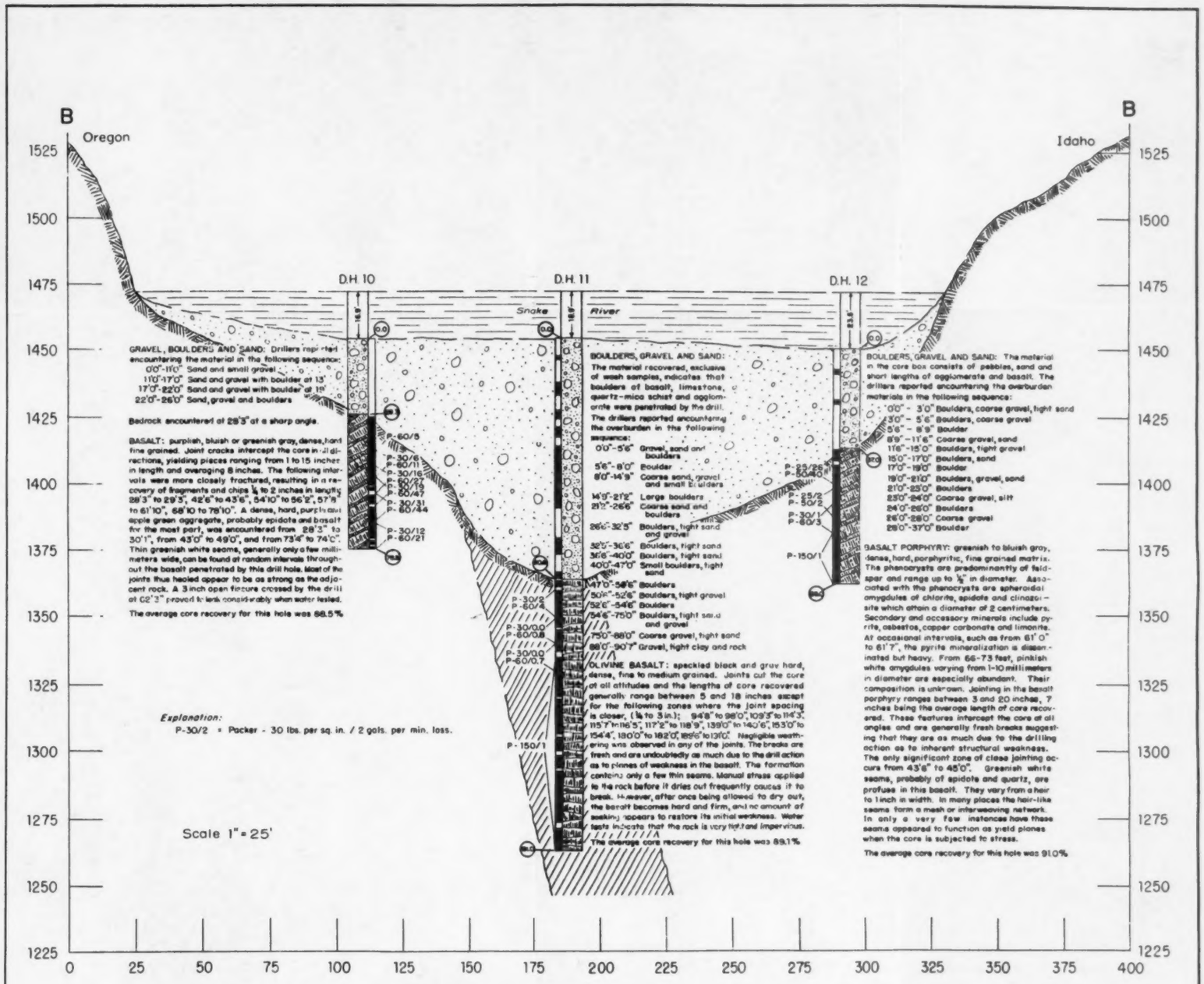
HELLS CANYON PROJECT, IDAHO-OREGON
GEOLOGIC INVESTIGATIONS

GEOLOGIC CROSS SECTION

DRAWN ... SUBMITTED ... M. L. Lyon
TRACED ... RECOMMENDED ...
CHECKED ... APPROVED ... C. J. Olson

BOISE, IDAHO May 15, 1952

67129 O - 56 (Face p. 26) No. 4


B
Oregon
B
Idaho
D.H. 10
D.H. 11
D.H. 12
Snake River
1525
1500
1475
1450
1425
1400
1375
1350
1325
1300
1275
1250
1225
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
GRAVEL, BOULDERS AND SAND: Drillers reported encountering the material in the following sequence:
0'0"-11'0" Sand and small gravel
11'0"-17'0" Sand and gravel with boulder at 13'
17'0"-22'0" Sand and gravel with boulder at 19'
22'0"-26'0" Sand, gravel and boulders
Bedrock encountered at 28'3" at a sharp angle.
BASALT: purplish, bluish or greenish gray, dense, hard, fine grained. Joint cracks intercept the core in all directions, yielding pieces ranging from 1 to 15 inches in length and averaging 8 inches. The following intervals were more closely fractured, resulting in a recovery of fragments and chips ¼ to 2 inches in length: 28'3" to 29'3", 42'6" to 43'6", 54'10" to 56'2", 57'8" to 61'10", 68'10 to 78'10". A dense, hard, purplish to apple green aggregate, probably epidote and basalt for the most part, was encountered from 28'3" to 30'1", from 43'0" to 49'0", and from 73'6" to 74'0". Thin greenish white seams, generally only a few millimeters wide, can be found at random intervals throughout the basalt penetrated by this drill hole. Most of the joints thus healed appear to be as strong as the adjacent rock. A 3 inch open fissure crossed by the drill at 62'3" proved to leak considerably when water tested.
The average core recovery for this hole was 88.5%
P-60/5
P-30/6
P-60/11
P-30/16
P-60/22
P-30/19
P-60/47
P-30/31
P-60/44
P-30/12
P-60/21
BOULDERS, GRAVEL AND SAND: The material recovered, exclusive of wash samples, indicates that boulders of basalt, limestone, quartz-mica schist and agglomerate were penetrated by the drill. The drillers reported encountering the overburden in the following sequence:
0'0"-5'6" Gravel, sand and boulders
5'6"-8'0" Boulder
8'0"-14'9" Coarse sand, gravel and small boulders
14'9"-21'2" Large boulders
21'2"-26'6" Coarse sand and boulders
26'6"-32'5" Boulders, tight sand and gravel
32'5"-36'6" Boulders, tight sand
36'6"-40'0" Boulders, tight sand
40'0"-47'0" Small boulders, tight sand
47'0"-50'6" Boulders
50'6"-52'6" Boulders, tight gravel
52'6"-54'6" Boulders
54'6"-75'0" Boulders, tight sand and gravel
75'0"-88'0" Coarse gravel, tight sand
88'0"-90'7" Gravel, tight clay and rock
OLIVINE BASALT: speckled black and gray hard, dense, fine to medium grained. Joints cut the core at all attitudes and the lengths of core recovered generally range between 5 and 18 inches except for the following zones where the joint spacing is closer, (¼ to 3 in.): 94'8" to 96'0", 109'3" to 114'3", 115'7" to 116'5", 117'2" to 118'9", 139'0" to 140'6", 153'0" to 154'4", 180'0" to 182'0", 195'6" to 197'0". Negligible weathering was observed in any of the joints. The breaks are fresh and are undoubtedly as much due to the drill action as to planes of weakness in the basalt. The formation contains only a few thin seams. Manual stress applied to the rock before it dries out frequently causes it to break. However, after once being allowed to dry out, the basalt becomes hard and firm, and no amount of soaking appears to restore its initial weakness. Water tests indicate that the rock is very tight and impervious.
The average core recovery for this hole was 89.1%
P-30/2
P-60/4
P-30/00
P-60/08
P-30/00
P-60/07
P-150/1
P-25/2
P-50/2
P-30/1
P-60/3
P-150/1
BOULDERS, GRAVEL AND SAND: The material in the core box consists of pebbles, sand and short lengths of agglomerate and basalt. The drillers reported encountering the overburden materials in the following sequence:
0'0" - 3'0" Boulders, coarse gravel, tight sand
3'0" - 5'6" Boulders, coarse gravel
5'6" - 8'9" Boulder
8'9" - 11'6" Coarse gravel, sand
11'6" - 15'0" Boulders, tight gravel
15'0" - 17'0" Boulders, sand
17'0" - 19'0" Boulder
19'0" - 21'0" Boulders, gravel, sand
21'0" - 23'0" Boulders
23'0" - 24'0" Coarse gravel, silt
24'0" - 26'0" Boulders
26'0" - 28'0" Coarse gravel
29'0" - 37'0" Boulder
BASALT PORPHYRY: greenish to bluish gray, dense, hard, porphyritic, fine grained matrix. The phenocrysts are predominantly of feldspar and range up to ⅛" in diameter. Associated with the phenocrysts are spheroidal amygdules of chlorite, epidote and clinozoisite which attain a diameter of 2 centimeters. Secondary and accessory minerals include pyrite, asbestos, copper carbonate and limonite. At occasional intervals, such as from 61' 0" to 61' 7", the pyrite mineralization is disseminated but heavy. From 66-73 feet, pinkish white amygdules varying from 1-10 millimeters in diameter are especially abundant. Their composition is unknown. Jointing in the basalt porphyry ranges between 3 and 20 inches, 7 inches being the average length of core recovered. These features intercept the core at all angles and are generally fresh breaks suggesting that they are as much due to the drilling action as to inherent structural weakness. The only significant zone of close jointing occurs from 43'6" to 45'0". Greenish white seams, probably of epidote and quartz, are profuse in this basalt. They vary from a hair to 1 inch in width. In many places the hair-like seams form a mesh or interweaving network. In only a very few instances have these seams appeared to function as yield planes when the core is subjected to stress.
The average core recovery for this hole was 91.0%
Explanation:
P-30/2 = Packer - 30 lbs. per sq. in. / 2 gals. per min. loss.
Scale 1" = 25'

Preliminary Geologic Section Across Bottom of Snake River Canyon Through Drill Holes 10, 11, and 12

L E G E N D

- Gravel, Boulders and Sand
- Olivine Basalt Dike
- Basalt
- Basalt Porphyry

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

HELLS CANYON PROJECT, IDAHO-OREGON

GEOLOGIC INVESTIGATIONS

GEOLOGIC CROSS SECTIONS

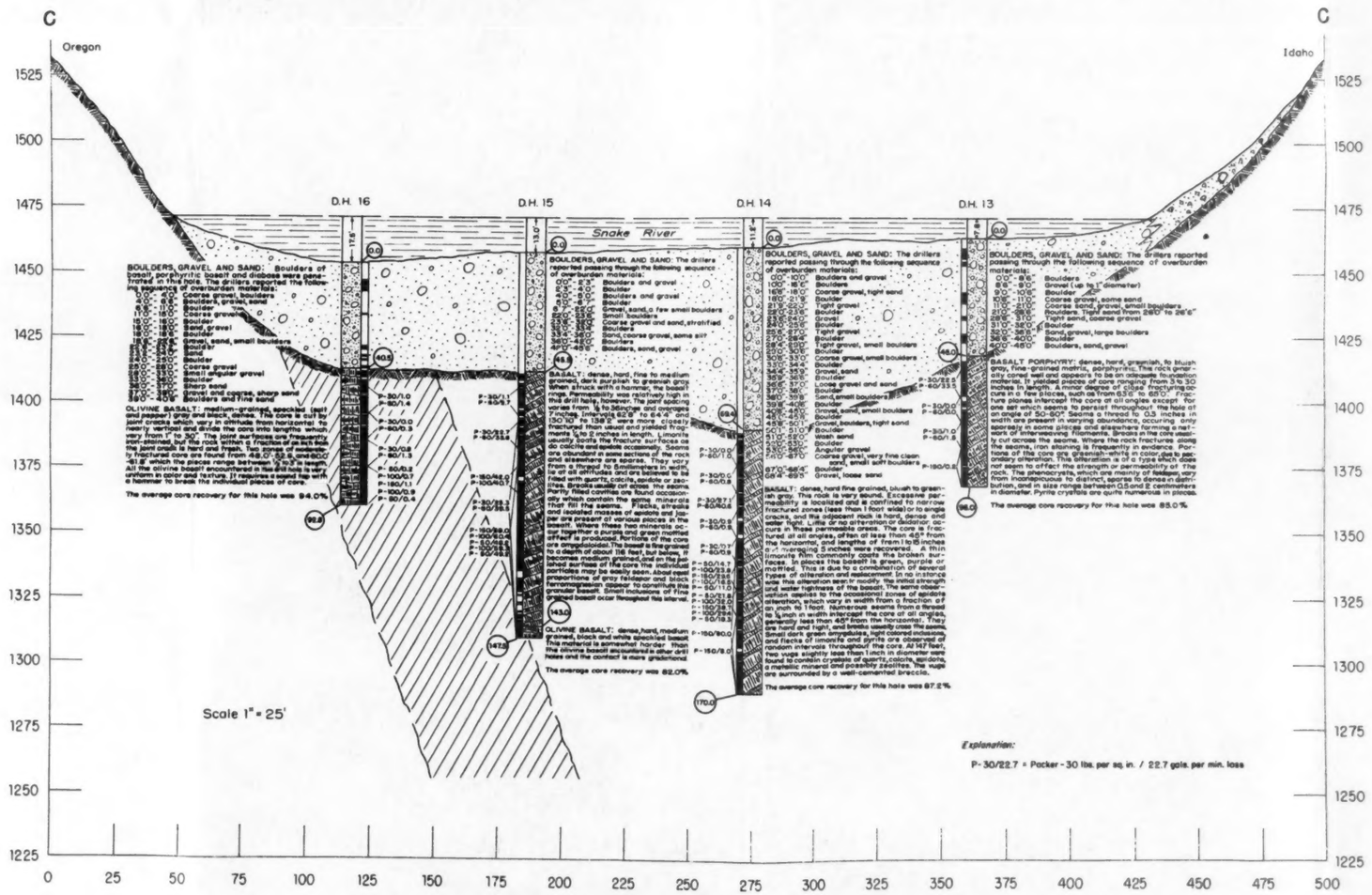
DRAWN ..... SUBMITTED Mark Lyon

TRACED ..... RECOMMENDED .....

CHECKED ..... APPROVED C. J. Olson

BOISE, IDAHO May 15, 1952

67129 O - 56 (Face p. 24) No. 5


C
C
Oregon
Idaho
D.H. 16
D.H. 15
D.H. 14
D.H. 13
Snake River
1525
1500
1475
1450
1425
1400
1375
1350
1325
1300
1275
1250
1225
0
25
50
75
100
125
150
175
200
225
250
275
300
325
350
375
400
425
450
475
500
Scale 1" = 25'
BOULDERS, GRAVEL AND SAND: Boulders of basalt porphyritic basalt and diabase were penetrated in this hole. The drillers reported the following sequence of overburden materials:
0.0'- 4.0' Coarse gravel, boulders
4.0'- 9.5' Boulders, gravel, sand
9.5'- 11.0' Boulder
11.0'- 15.0' Coarse gravel
15.0'- 16.0' Boulder
16.0'- 18.0' Sand, gravel
18.0'- 19.0' Boulder
19.0'- 21.5' Gravel, sand, small boulders
21.5'- 23.5' Boulder
23.5'- 65.0' Sand
65.0'- 68.0' Boulder
68.0'- 69.0' Coarse gravel
69.0'- 74.0' Small angular gravel
74.0'- 76.0' Boulder
76.0'- 87.0' Sharp sand
87.0'- 89.0' Gravel and coarse, sharp sand
89.0'- 95.0' Boulders and fine sand
OLIVINE BASALT: medium-grained, speckled (salt and pepper) gray and black, dense. This core is cut by joint cracks which vary in attitude from horizontal to nearly vertical and divide the core into lengths which vary from 1" to 30". The joint surfaces are frequently iron-stained. The rock contains a fraction of an inch beside the joint cracks is hard and tough. Between 48.0' and 53.0', and 60.0' - 61.8' which the pieces range between ½" to 2" in length. All the olivine basalt encountered in the drill hole is very uniform in color and texture. It requires a sound tap with a hammer to break the individual pieces of core.
The average core recovery for this hole was 94.0%
BOULDERS, GRAVEL AND SAND: The drillers reported passing through the following sequence of overburden materials:
0.0'- 8.3' Boulders and gravel
8.3'- 9.0' Boulder
9.0'- 14.0' Boulders and gravel
14.0'- 14.7' Boulder
14.7'- 19.2' Gravel, sand, a few small boulders
19.2'- 25.0' Small boulders
25.0'- 26.0' Coarse gravel and sand, stratified
26.0'- 33.0' Boulders
33.0'- 38.0' Sand, coarse gravel, some silt
38.0'- 40.0' Boulders
40.0'- 48.5' Boulders, sand, gravel
BASALT: dense, hard, fine to medium grained, dark purplish to greenish gray when struck with a hammer, the basalt rings. Permeability was relatively high in this drill hole, however. The joint spacing varies from ½ to 36 inches and averages 7 inches. Intervals 62.9' to 64.4' and 130.10' to 138.2' were more closely fractured than usual and yielded fragments ½ to 2 inches in length. Limonite usually bonds the fracture surfaces as do calcite and epidote occasionally. Seams are abundant in some sections of the rock and elsewhere are sparse. They vary from a thread to 5 millimeters in width. Six of all attitudes and are believed to be filled with quartz, calcite, epidote or zeolites. Breaks usually cut across the seams. Partly filled cavities are found occasionally which contain the same minerals that fill the seams. Flecks, streaks and isolated masses of epidote and jasper are present at various places in the basalt. Where these two minerals occur together a purple and green mottled effect is produced. Portions of the core are amygdaloidal. The basalt is fine grained to a depth of about 116 feet, but below, it becomes medium grained, and on the polished surface of the core the individual plagioclase particles may be easily seen. About equal proportions of gray feldspar and black ferromagnesian glassor fo constitute this granular basalt. Small inclusions of fine grained basalt occur throughout this interval.
OLIVINE BASALT: dense, hard, medium grained, black and white speckled basalt. This material is somewhat harder than the olivine basalt encountered in other drill holes and the contact is more gradational.
The average core recovery was 82.0%
BOULDERS, GRAVEL AND SAND: The drillers reported passing through the following sequence of overburden materials:
0.0'- 10.0' Boulders and gravel
10.0'- 18.6' Boulders
18.0'- 21.9' Coarse gravel, tight sand
21.9'- 22.2' Boulder
22.2'- 23.5' Tight gravel
23.5'- 24.0' Boulder
24.0'- 25.5' Gravel
25.5'- 26.0' Boulder
26.0'- 27.5' Tight gravel
27.5'- 28.6' Boulder
28.6'- 29.0' Tight gravel, small boulders
29.0'- 30.5' Boulder
30.5'- 31.0' Coarse gravel, small boulders
31.0'- 34.4' Boulder
34.4'- 35.9' Gravel, sand
35.9'- 36.5' Boulder
36.5'- 37.0' Loose gravel and sand
37.0'- 38.6' Boulder
38.6'- 39.0' Sand, small boulders
39.0'- 40.6' Boulder
40.6'- 45.5' Tight sand, small boulders
45.5'- 45.9' Boulder
45.9'- 50.1' Tight sand, boulders, tight sand
50.1'- 51.0' Boulder
51.0'- 53.0' Wash sand
53.0'- 53.5' Boulder
53.5'- 63.0' Angular gravel
63.0'- 67.0' Coarse gravel, very fine clean sand, small soft boulders
67.0'- 68.4' Boulder
68.4'- 69.3' Gravel, loose sand
BASALT: dense, hard fine grained, bluish to greenish gray. This rock is very sound. Excessive permeability is localized and is confined to narrow fractured zones (less than 1 foot wide) or to single cracks, and the adjacent rock is hard, dense and water tight. Little or no alteration or oxidation occurs in these permeable areas. The core is fractured at all angles, often at less than 45° from the horizontal, and lengths of from 1 to 15 inches of unbroken core were recovered. A thin limonite film commonly coats the broken surfaces. In places the basalt is green, purple or mottled. This is due to a combination of several types of alteration and replacement. In no instance was the alteration severe enough to modify the initial strength and water tightness of the basalt. The same observation applies to the occasional zones of epidote alteration, which vary in width from a fraction of an inch to 1 foot. Numerous seams from a thread to ¼ inch in width intercept the core at all angles, generally less than 45° from the horizontal. They are hard and tight, and breaks usually cross the seams. Small dark green amygdules, light colored calcite and flecks of limonite and pyrite are observed at random intervals throughout the core. At 147 feet, two vugs slightly less than 1 inch in diameter were found to contain crystals of quartz, calcite, epidote, a metallic mineral and possibly zeolites. The vugs are surrounded by a well-cemented breccia.
The average core recovery for this hole was 87.2%
BOULDERS, GRAVEL AND SAND: The drillers reported passing through the following sequence of overburden materials:
0'0"- 8'6" Boulders
8'6"- 9'0" Gravel (up to 1" diameter)
9'0"- 10'6" Boulder
10'6"- 11'0" Coarse gravel, some sand
11'0"- 21'0" Coarse sand, gravel, small boulders
21'0"- 24'6" Boulders. Tight sand from 24'0" to 24'6"
24'6"- 31'0" Tight sand, coarse gravel
31'0"- 35'0" Boulder
35'0"- 36'6" Sand, gravel, large boulders
36'6"- 40'0" Boulder
40'0"- 46'0" Boulders, sand, gravel
BASALT PORPHYRY: dense, hard, granular, to bluish gray, fine-grained matrix, porphyritic. The rock generally cored well and appears to be an adequate foundation material. It yielded pieces of core ranging from 3 to 30 inches in length. A minor degree of close fracturing occure in a few places, such as from 63'6" to 65'0". Fracture planes intercept the core at all angles except for one set which seems to persist throughout the hole at an angle of 50-60°. Seams a thread to 0.3 inches in width are present in varying abundance, occuring only sparsely in some places and elsewhere forming a network of interweaving filaments. Breaks in the core usually cut across the seams. Where the rock fractures along the seams, iron staining is frequently in evidence. Portions of the core are greenish-white in color, due to secondary alteration. The alteration is of a type which does not seem to affect the strength or permeability of the rock. The phenocrysts, which are mainly of feldspar, vary from inconspicuous to distinct, sparse to dense in distribution, and in size range between 0.5 and 2 centimeters in diameter. Pyrite crystals are quite numerous in places.
The average core recovery for this hole was 85.0%
Explanation:
P-30/22.7 = Packer - 30 lbs. per sq. in. / 22.7 gals. per min. loss
LEGEND
Talus and Slope Wash
Gravel, Boulders and Sand
Olivine Basalt Dike
Basalt
Basalt Porphyry

Preliminary Geologic Section Across Bottom of Snake River Canyon Through Drill Holes 16, 15, 14, and 13

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
HELLS CANYON PROJECT, IDAHO-OREGON
GEOLOGIC INVESTIGATIONS
GEOLOGIC CROSS SECTION

DRAWN ..... SUBMITTED ..... Chief Engineer
TRACED ..... RECOMMENDED .....
CHECKED ..... APPROVED ..... C. J. Olson
BOISE, IDAHO May 15, 1952

67129 O - 56 (Face p. 26) No. 6

In agreement with the above duties and responsibilities, the estimates for construction of Hells Canyon Dam, powerplant, and appurtenant features, except for land and land rights, roads, trails, and bridges, communication and recreational facilities were prepared under my direction. Land and land rights, roads, trails, and bridges, communication and recreational facilities were prepared under the direction of the regional director.

The attached tabulation shows the estimated cost by accounts including a contingency reserve and investigations, engineering, and general expense for Hells Canyon project on three separate bases: January 1953 prices, the same estimate indexed to April 1955 prices, and a third category based upon April 1955 prices incorporating a reduction due to the experience gained in the construction of Hungry Horse and including the elimination of some excess included in the previous estimates which was testified to in the Federal Power Commission hearings in January 1954.

Cost estimates for Hells Canyon project, Idaho-Oregon

	Estimated cost, January 1952 prices	Index		Multiplier, 1955 index divided by 1952 index	Estimated cost, April 1955 prices	Reduction [1]	April 1955 prices less reduction [1]
		January 1952	April 1955				
Land and land rights	$20,600,000				$20,600,000	0	$20,600,000
Structures and improvements	27,600,000	1.12	1.20	1.07	29,532,000	$5,232,000	24,300,000
Reservoirs, dams, and waterways	155,930,000	1.07	1.00	.935	145,795,000	0	145,795,000
Turbines and generators	40,475,000	1.22	1.31	1.074	43,470,000	9,570,000	33,900,000
Accessory electric equipment	4,900,000	1.20	1.24	1.033	5,062,000	1,362,000	3,700,000
Miscellaneous powerplant equipment	4,025,000	1.13	1.21	1.07	4,307,000	1,837,000	2,470,000
Roads, trails, and bridges	15,008,000	1.11	1.11	1.00	15,008,000	0	15,008,000
Transmission equipment (switchyard)	12,190,000	1.19	1.38	1.16	14,140,000	3,800,000	10,340,000
General property (camp, etc.)	10,782,000	1.15	1.18	1.026	11,062,000	802,000	10,260,000
Communication facilities	80,000	1.20	1.24	1.033	83,000	0	83,000
Recreational facilities	1,000,000	1.09	1.13	1.037	1,037,000	0	1,037,000
Transfers to other Government agencies	200,000				200,000	200,000	0
Contingency reserve	5,000,000			.991	4,955,000	4,955,000	0
Investigations, engineering, and general expenses	59,020,000			.991	58,489,000	17,510,000	40,979,000
Grand total	356,810,000				353,740,000	45,268,000	308,472,000

[1] Reduction due to experience gained in construction of Hungry Horse project, including the elimination of some excess included in previous estimate as testified to in FPC hearings in January 1954.

NOTE.—Maximum W. S. elevation, 2,077 feet; installation, 800,000 kilowatts; maximum head, 602 feet.

ESTIMATE OF POWER PRODUCTION AND COSTS OF GENERATION—HIGH HELLS CANYON DAM BY J. R. RITER, DEVELOPMENT ENGINEER, COMMISSIONER'S OFFICE, DENVER, COLO., APRIL 27, 1955, WITH JULY 1955 SUPPLEMENT

The purpose of this statement is to present estimates of power production and costs of generation for the high Hells Canyon Dam located on the Snake River downstream from Weiser, Idaho. The Hells Canyon Dam would create a maximum power head of 602 feet, a total storage capacity of 4,400,000 acre-feet, and an ultimate powerplant capacity of 900,000 kilowatt. The cost estimates presented by Mr. Hoisington are for a powerplant of 800,000-kilowatt capacity with space to permit the future installation of a ninth unit. The reservoir would be operated for the multiple purposes of flood control, navigation, and power development. The operations of the project would be coordinated with other developments within the Columbia River Basin.

STREAM FLOW

The Snake River has been measured at Oxbow (located 28 miles upstream from the Hells Canyon Dam site) since 1923 and at Weiser, Idaho (located 95 miles upstream from the Hells Canyon Dam site) since October 1910. The following table shows the historic flows of the Snake River at the Hells Canyon Dam site and the estimated depleted flows for three levels of upstream irrigation development:

(1) Present (1948) level of development as determined in 1951 by the Technical Subcommittee of the Columbia Basin Interagency Committee.
(2) Irrigation anticipated by A. D. 1985 as estimated by J. R. Riter in 1953.
(3) Future irriagtion development as envisioned in May 1951 by the Technical Subcommittee of the Columbia Basin Interagency Committee.

TABLE 1.—*Discharge Snake River at Hells Canyon dam site*

[1,000 acre-feet]

Year ending Sept. 30	Historic flows [1]	Estimated depleted flows [2]		
		Present 1948 level [3]	1985 level [4]	Future development [3]
1911	16,800			
1912	17,600			
1913	17,000			
1914	17,000			
1915	10,900			
1916	17,900			
1917	18,900			
1918	15,300			
1919	12,800			
1920	11,200			
1921	19,200			
1922	16,200			
1923	13,400			
1924	9,420			
1925	15,000			
1926	10,300			
1927	15,500			
1928	17,200			
1929	11,368	11,033	9,012	8,724
1930	9,794	9,605	8,475	7,331
1931	8,081	8,297	7,806	6,218
1932	11,948	10,244	9,505	7,483
1933	10,510	10,080	9,624	7,811
1934	8,197	8,521	8,170	6,688
1935	8,512	8,433	7,865	6,022
1936	11,747	10,919	10,157	8,169
1937	9,058	8,964	8,607	6,852
1938	15,512	13,627	12,849	10,891
1939	10,671	11,788	9,743	9,101
1940	10,981	10,676	10,205	8,443
1941	11,008	10,956	10,260	8,376
1942	13,156	12,251	11,784	9,679
1943	19,750	18,831	16,340	15,742
1944	11,272	11,377	9,634	9,165
1945	12,424	11,808	10,207	9,180
1946	15,945	16,516	13,196	14,173
1947	13,194	13,275	11,201	10,851
1948	13,455	13,284	11,325	10,912
1949	12,900			
1950	14,104			
1951	16,490			
1952	20,427			
1953	13,861			
Average, 20 years, 1929–48	11,829	11,524	10,298	9,089
Average, 43 years, 1911–53	13,630			

[1] 1924 to 1952, inclusive, from Water Supply Papers of U. S. Geological Survey, Snake River at Oxbow, Oreg. 1911 to 1923 estimated from USGS records of Snake River at Weiser, Idaho.
[2] Estimated only for 20 years, 1929 to 1948, inclusive.
[3] From May 1951 Report on Snake River Streamflow Depletions by Columbia Basin Inter-Agency Committee Technical Subcommittee for Operating Plan.
[4] Estimate by J. R. Riter. Method discussed on pp. 2 to 16, inclusive of exhibit 186 in Federal Power Commission hearings on projects 1971, 2132, and 2133.

UPSTREAM IRRIGATION DEVELOPMENT

The streamflows as recorded have been influenced by upstream developments for irrigation and the operation of storage reservoirs on the Snake River and its tributaries. The area irrigated in the Snake River Basin above the Hells Canyon Dam site has increased from 1,400,000 acres in 1910 to 2,610,000 acres in 1948.

Since 1948, there have been some increases in the irrigated area, both from the use of surface streams and by pumping from ground water. In the period, 1910 to 1948, the capacity of storage reservoirs within the basin above the Hells Canyon Dam site increased from 1,600,000 acre-feet in 1910 to 7,300,000 acre-feet in 1948. The Lucky Peak Reservoir with an active capacity of 280,000 acre-feet has since been completed on the Boise River, and the Palisades Reservoir with an active storage capacity of 1,200,000 acre-feet is now under construction on the Snake River above Idaho Falls, Idaho. The streamflows are influenced also by the operations of an undetermined capacity of underground storage beneath the Snake River plains in Idaho.

For the 1985 level of development, it is estimated that the irrigated area will increase to a total of about 3,250,000 acres. The "future development" envisioned by the CBIAC contemplates that the irrigated area above the Hells Canyon Dam site will increase to 3,806,000 acres. It is possible that the depletion represented by such future development may be attained by the end of the repayment period for a Hells Canyon development.

MAJOR FEDERAL POWER SYSTEM IN THE COLUMBIA RIVER BASIN

Table 2 summarizes data pertaining to major Federal power developments within the Columbia River Basin. It is anticipated that the operations of the Hells Canyon development will be coordinated with these and future plants to be built within the Columbia River Basin to attain the maximum practical amount of system power output.

TABLE 2.—*Major Federal power developments within Columbia River Basin*

Name	River	Average head (feet)	Live storage (thousand acre-feet)	Status [1]
Hungry Horse	South Fork Flathead	426	2,980	O
Libby	Kootenai	290	5,010	A
Albeni Falls	Pend Oreille	22	1,153	C O
Grand Coulee	Columbia	314	5,118	O
Chief Joseph	do	169	[3]	C O
Priest Rapids	do	146	[3]	A
Lower Granite [3]	Snake	81	[3]	A
Little Goose [3]	do	99	[3]	A
Lower Monumental [3]	do	92	[3]	A
Ice Harbor [3]	do	98	[3]	A
McNary [3]	Columbia	83	[3]	C O
John Day [3]	do	94	[3]	A
The Dalles [3]	do	85	[3]	C
Bonneville [3]	do	55	[3]	O
Total		2,054	14,261	

[1] A=Authorized but not constructed. C=Under construction. O=Operating.
[2] Pongage.
[3] Can utilize storage releases from Hells Canyon Reservoir site.

OPERATION OF HELLS CANYON RESERVOIR

A study of the possible power output at the sites listed in table 2 shows:
(1) An abundance of power in the flood season of each year; and
(2) A critical low period in the fall and winter season.

In view of this situation, it is contemplated that the power output of the Hells Canyon development will be concentrated in the fall and winter months, with the output at the site held to a minimum during the flood season on the Columbia River to assist in refilling of the live storage capacity. The Hells Canyon development will be coordinated in operation with the other units of the Federal system to secure maximum system benefits for flood control and prime power output. The release of storage will be governed by system requirements for these purposes. It is anticipated also that use will be made of runoff forecasts early in the spring to secure optimum use of system storage and power production capability.

67129—56——3

A review of system operation studies heretofore made by the Corps of Engineers, the Bonneville Power Administration, the Bureau of Reclamation, and other agencies, indicates that with present developments (operating and under construction) within the Columbia River Basin, the critical storage drawdown season which determines system prime power output is the 8-month period, September 1936 to April 1937, inclusive. As the power system is expanded by the addition of other major storage and power units to meet increasing power needs, the length of the critical period which determines system prime power capability will increase to require storage releases over several seasons. At some future time, the storage release period will extend through the 42 months, September 1928 to February 1932, inclusive. The operation plan for the Hells Canyon development will need be modified, from time to time, in the future to permit the development to best be coordinated with the power system.

Storage released from the Hells Canyon Reservoir during the low-water season will increase the stream flow and hence the power output at downstream sites along the Snake River and lower Columbia River. The amount of such downstream power head which can thus utilize storage releases from the Hells Canyon development varies with the stage of development as follows:

(1) Existing (operating and under construction) downstream developments, 223 feet.

(2) Existing and authorized downstream developments, 687 feet.

(3) Existing, authorized, and future potential developments, about 1,350 feet.

POWER OUTPUT

The power output has been estimated on two basic assumptions:

(1) Hells Canyon will be operated as a unit of the system to produce maximum system prime power output (1-kilowatt system prime power equals 8,760 kilowatt-hours per year).

(2) Hells Canyon will be operated to produce the maximum amount of salable energy without impairing the at-site dependable capacity.

PRIME POWER PRODUCTION

These studies have been made only on the basis of streamflow (table 1) for the historic flows and the 1985 level of irrigation development. Various assumptions were made regarding the length of critical period which determines the system prime power output and the amount of downstream head developed. The results of the studies are summarized in table 3.

TABLE 3.—*Estimate of prime power added to system by Hells Canyon development*

[1,000 kilowatts]

Length of critical development	Using historic streamflows			Using streamflows with 1985 level of development		
	Production at site	Increase downstream	Total	Production at site	Increase downstream	Total
8 months (1936-37)	681	[1] 129	810	710	[1] 129	839
	681	[2] 398	1,079	710	[2] 398	1,108
31 months (nonflood seasons 1928-32)	705	[2] 257	962	654	[2] 257	911
42 months (September 1928 to February 1932, inclusive)	585	[3] 145	730	534	[3] 145	679

[1] Downstream power head 223 feet (existing downstream developments).
[2] Downstream power head 687 feet (existing and authorized downstream developments).
[3] Downstream power head 1,350 feet (existing, authorized, and potential downstream developments).

From the data contained in the preceding table, it is estimated that the average amount of prime power added to the system by Hells Canyon during a 50-year amortization period would be about 900,000 kilowatts. This figure is based

on the contribution of Hells Canyon development during critical periods which determine system prime power output.

UNIT COST OF PRIME POWER PRODUCTION

The estimated construction cost (April 1955 prices) of the Hells Canyon Dam, Reservoir, and powerplant (800,000 kilowatts) is $353,740,000. From advance information secured from the Corps of Engineers on their recent review of flood control and navigation benefits, it is tentatively estimated that nonreimbursable allocations of approximately $48 million would be justified for the Hells Canyon development.

Table 4 presents the results of a shortcut financial study to determine the average cost of generation of prime power added to the system by the Hells Canyon development.

TABLE 4

		Amount
Estimated construction cost	dollars	353, 740, 000
Interest during construction [1]	do	26, 530, 000
Total investment	do	380, 270, 000
Nonreimbursable allocation	do	48, 000, 000
Allocation to power	do	332, 270, 000
Annual cost of generation:		
Interest and amortization [2]	do	11, 716, 000
Operation, maintenance, and replacements	do	2, 631, 000
Subtotal at site	do	14, 347, 000
Installations at other plants in system [3]	do	2, 932, 000
Total annual cost of generation	do	17, 279, 000
Prime power added to system	kilowatts	900, 000
Unit cost of prime power added to system	dollars per kilowatt	19. 20

[1] 6-year construction period assumed; interest rate 2½ percent.
[2] 0.03526 times allocation to power (50-year amortization period with interest at 2½ percent).
[3] This item represents the annual cost (interest 2½ percent, amortization in 50 years, operation, maintenance, and replacements) of units (700,000 kilowatts) added to other major plants in the system to permit load factor of the added system prime power output, considering the reduced capability at the Hells Canyon plant at extreme drawdown in critical periods. Estimates based on preliminary cost data secured from the Corps of Engineers.

Assuming annual transmission costs of $7 per kilowatt of installation, 75 percent system load factor, transmission losses of 10 percent at peak and 7 percent average between the powerplant and load centers, and a diversity factor of 1.05, the equivalent annual cost at load centers of the indicated increased system prime power output would be computed as follows:

Prime power generation	kilowatts	900, 000
Salable power at load centers (75 percent load factor, 1.05 diversity, and 10 percent loss)	kilowatts	1, 134, 000
Firm energy at load centers (7 percent transmission loss in energy)	kilowatt-hours	7, 332, 000, 000
Annual cost of transmission ($7 x 1,500,000)	dollars	10, 500, 000
Annual cost of generation (table 4)	do	17, 300, 000
Total amount cost	do	27, 800, 000
Unit costs at load centers:		
Per kilowatt increase salable power	do	24. 50
Per kilowatt-hour increased energy	mills	3. 79

NOTE.—Part of the indicated increased system energy will be generated at other plants in the power system.

EVALUATION OF HELLS CANYON POWER OUTPUT BY USE OF DEPENDABLE CAPACITY AND AVERAGE ANNUAL SALABLE GENERATION

In recent years, in an attempt to envision the value of potential hydroelectric developments when integrated into a system which involves substantial amounts of steam-generated energy as well as hydroelectric energy, there has been utilized a method of analysis which compares the at-site power costs with the projected future value of power in the Northwest power system. The following procedures are used in this method of evaluation:

(*a*) Determine the average at-site salable energy generation and the increased energy generation by use of project storage at downstream sites. For the Columbia system, the output during the 9 months of August to April, inclusive, is considered to be salable.

(*b*) Determne the dependable capacity by application of a 75-percent load factor to the at-site salable generation described in (*a*). However, such dependable capacity should not be greater than the installed capacity at the site.

(*c*) Evaluate (*a*) and (*b*) by use of future power values projected by the Federal Power Commission for hydroelectric power in the Northwest. These values (at load centers) are $16.50 per kilowatt-year of dependable capacity and 3.34 mils per kilowatt-hour of salable energy. With allowances for estimated transmission losses and transmission costs, the estimated at-power-site values become $7.85 per kilowatt-year of dependable capacity and 3.11 mills per kilowatt-hour of energy.

(*d*) Compare the annual at-site power values determined in (*c*) with the annual at-site power costs.

The method outlined herein has been applied to the Hells Canyon development, using reconnaissance estimates of average annual generation for the 20-year period, 1929 to 1948, inclusive. In the application of this method, it was assumed that all of the authorized downstream power developments shown in table 2 would be completed. The studies indicated the need for installation of the ninth unit at the Hells Canyon power site. Addition of the unit is estimated to increase the project construction cost at Hells Canyon by $8,150,000 and to increase the annual operation, maintenance, and replacement costs by $253,000. With the ninth unit added, the output capacity at Hells Canyon would be 900,000 kilowatts.

Table 5 presents the estimates of average annual generation for various levels of upstream irrigation development. Table 6 compares the estimated value of the power output with the annual costs of generation.

TABLE 5

	Units	With present flows	With 1985 flows	With future flows
20-year average flows [1]	1,000 acre-feet	11,524	10,298	9,089
Average annual storage drawdown [2]	do	2,280	2,193	1,174
Average annual generation:				
At site May to July, inclusive [3]	Million kilowatt-hours.	340	320	200
At site August to April, inclusive [4]	do	5,230	4,700	4,410
Increase downstream [5]	do	1,300	1,250	670
Salable generation [6]	do	6,530	5,950	5,080
Dependable capacity	Kilowatts	900,000	900,000	900,000

[1] From table 1.
[2] Maximum permissible drawdown 2,600,000 acre-feet to avoid impairment of dependable capacity at Hells Canyon powerplant.
[3] Generation in this period assumed to be nonsalable, since it occurs at a time when there is generally a large surplus of energy in the system.
[4] Assumed to be salable.
[5] By use of Hells Canyon storage through existing and authorized downstream units (total downstream head 687 feet).
[6] Sum of at-site in August to April period and increase downstream.

From the studies summarized in table 5, it is estimated that the average salable generation will be about 5,850 million kilowatt-hours annually.

TABLE 6

		Amount
Estimated construction cost [1]	dollars	361, 890, 000
Interest during construction [2]	do	27, 140, 000
Total	do	389, 030, 000
Nonreimbursable allocation	do	48, 000, 000
Allocation to power	do	341, 030, 000
Installation at site	kilowatts	900, 000
Average salable generation [3]	million kilowatt-hours	5, 850
Annual at-site value of power:		
Dependable capacity [4]	dollars	7, 065, 000
Salable energy [5]	do	18, 194, 000
Total	do	25, 259, 000
Annual at-site costs:		
Interest and amortization [6]	do	12, 025, 000
Operation, maintenance and repairs	do	2, 884, 000
Total	do	14, 909, 000
Ratio of value to costs		1. 69–1. 00

[1] Estimate shown in table 4 increased by $8,150,000 for 9th power unit.
[2] 6-year construction period assumed. Interest rate 2½ percent.
[3] From studies summarized in table 5.
[4] Unit value $7.85 per kilowatt.
[5] Unit value 3.11 mills per kilowatt-hour.
[6] 2½ percent interest and 50-year amortization.

JULY 1955 SUPPLEMENT

Mr. Hoisington has estimated costs of a powerplant of 800,000-kilowatt capacity if costs indicated by Hungry Horse experience prevail. This estimated cost is $308,472,000. Using this estimate, the shortcut financial study shown in table 4 would be revised as indicated in table 7.

TABLE 7

		Amount
Estimated construction cost	dollars	308, 472, 000
Interest during construction [1]	do	23, 135, 000
Total investment	do	331, 607, 000
Nonreimbursable allocation	do	48, 000, 000
Allocation to power	do	283, 607, 000
Annual cost of generation:		
Interest and amortization [2]	do	10, 000, 000
Operation, maintenance, and replacements	do	2, 631, 000
Subtotal at site	do	12, 631, 000
Installations at other plants in system [3]	do	2, 932, 000
Total annual cost of generation	do	15, 563, 000
Prime power added to system	kilowatts	900, 090
Unit cost of prime power added to system	dollars per kilowatt	17. 20

[1] 6-year construction period assumed; interest rate 2½ percent.
[2] 0.03526 times allocation to power (50-year amortization period with interest at 2½ percent).
[3] This item represents the annual cost (interest 2½ percent, amortization in 50 years, operation, maintenance, and replacements) of units (700,000 kilowatts) added to other major plants in the system to permit load factor of the added system prime power output, considering the reduced capability at the Hells Canyon plant at extreme drawdown in critical periods. Estimates based on preliminary cost data secured from the Corps of Engineers.

Assuming annual transmission costs of $7 per kilowatt of installation, 75 percent system load factor, transmission losses of 10 percent at peak, and 7 percent average between the powerplant and load centers, and a diversity factor of 1.05, the equivalent annual cost at load centers of the indicated increase in system prime power output would be computed as follows:

Prime power generation	kilowatts	900,000
Salable power at load centers (75 percent load factor, 1.05 diversity, and 10 percent loss)	do	1,134,000
Firm energy at load centers (7 percent transmission loss in energy)	million kilowatt-hours	7,332
Annual cost of transmission ($7 × 1,500,000)	dollars	10,500,000
Annual cost of generation (table 7)	do	15,600,000
Total annual cost	do	26,100,000
Unit costs at load centers:		
Per kilowatt increase salable power	do	23
Per kilowatt-hour increase energy	mills	3.56

NOTE.—Part of the indicated increase in system energy will be generated at other plants in the power system.

If a ninth unit is installed at an estimated cost of $6,305,000, based on experience gained at Hungry Horse, and the estimated cost of $308,472,000 is used for the initial Hells Canyon dam and powerplant, table 6 would be revised as shown in table 8.

TABLE 8

		Amount
Estimated construction cost [1]	dollars	314,777,000
Interest during construction [2]	do	23,608,000
Total investment	do	338,385,000
Nonreimbursable allocation	do	48,000,000
Allocation to power	do	290,385,000
Installation at site	kilowatts	900,000
Average salable energy [3]	million kilowatt-hours	5,850
Annual at-site value of power:		
Dependable capacity [4]	dollars	7,065,000
Salable energy [5]	do	18,194,000
Total	do	25,259,000
Annual at-site costs:		
Interest and amortization [6]	do	10,239,000
Operation, maintenance, and repairs	do	2,884,000
Total	do	13,123,000
Ratio of value to costs		1.92 to 1

[1] Estimate shown in table 7 increased by $6,505,000 for 9th unit with costs based upon experience gained at Hungry Horse.
[2] 6-year construction period assumed. Interest rate 2½ percent.
[3] From studies summarized in table 5.
[4] Unit value $7.85 per kilowatt.
[5] Unit value 3.11 mills per kilowatt-hour.
[6] 2½ percent interest and 50-year amortization.

FUTURE UPSTREAM DEPLETION ABOVE HELLS CANYON

By Lynn Crandall,[1] April 6, 1953

The discussion of this subject will be divided into various sections as follows:

1. THE SNAKE RIVER PLAIN

This term as used herein applies to the area north of Snake River extending southwest from St. Anthony to Bliss, beneath which the great Snake River ground-water flow moves. Generally speaking, the soils in this area, where

[1] District engineer, U. S. Geological Survey, Idaho Falls, Idaho, and Snake River watermaster, Idaho State Department of Reclamation.

they exist, are of a satisfactory quality for agricultural use outside of local areas of sand dunes. There exists, however, a wide range of soil depths and depths to ground water. A large portion of the area is either bare lava rock or shallow soils. About 300 feet is assumed to be the maximum pumping lift likely to be sustained during the Hells Canyon payout period for profitable farming operations in this region. It is possible that greater lifts than this may prove feasible under certain conditions but the additional acreage involved is not likely to be of great magnitude. After examining the available information on this area, including my own observations from driving over it for many years, I believe that possibly 400,000 acres may be feasible of development by ground-water pumping. This figure and other similar ones in this report include the pumping developments already made since 1947. In this section the ground-water supply is believed to be adequate generally and the controlling elements are good land and feasible pumping lifts.

2. MINOR TRIBUTARY STREAMS FROM THE NORTH, CAMAS CREEK TO BIG WOOD RIVER

In this section ground-water pumping will be limited in some cases by available supplies contributed from the tributary streams. In some of the valleys pumping may be used as supplemental supply for lands that do not now receive a full supply in dry years. It is believed that the total use might be the equivalent of supplying about 45,000 acres of new lands. This would include any new storage developments on these streams.

3. FORT HALL PROJECT

There are about 40,000 acres of new land on this project susceptible of irrigation, probably mostly by pumping from ground water. Some lawyers claim that the Indians' treaty rights would entitle them to so use the water even if it interfered with downstream Snake River rights. Some small developments are already under way by leasing the land for a term of years to whites who agree to provide a well on the land. About half of this area is south of the Portneuf River in the Michaud Flat-Bannock Creek region and about half in the vicinity of Fort Hall. The land around Fort Hall have mostly somewhat sandy soils.

4. MARGINAL INCREASES TO EXISTING PROJECTS ABOVE AMERICAN FALLS

There is a narrow fringe of good land along the benches bordering the lands at present irrigated from Snake River along the east side of the valley between Ririe and Blackfoot. This may be irrigated partly by pumping from ground water and partly by pumping from existing canals whose water supply will be augmented from Palisades Reservoir. Some similar areas exist west of Snake River between Roberts and Shelley. During recent years there has been considerable clearing of brushlands and those subject to flooding in high-water years between Heise and Roberts. All these and others somewhat similar elsewhere are estimated to total 15,000 acres starting from 1947.

5. TRIBUTARY VALLEYS SOUTH OF SNAKE RIVER, FROM PORTNEUF RIVER TO SALMON FALLS RIVER, INCLUSIVE

In most of this section ground-water pumping developments will be limited by water supply or pumping lift. In some of the tributary valleys ground-water pumping might be used as supplemental supply; in others it would be used on new land. It is estimated that the total use for both purposes might be equivalent to irrigating 60,000 acres of new land.

6. BRUNEAU PROJECT

The Bruneau project of above 400,000 acres as heretofore proposed required the construction of a dam about 500 feet high on Snake River near Bliss, Idaho, and the creation of a reservoir which would flood Hagerman Valley, including about 10,000 acres of irrigated land and 4 powerplants of the Idaho Power Co. Owing to the likelihood of large leakage through the porous intercanyon lava fill at the dam site it does not now appear feasible to construct the proposed dam. This fact, together with the large costs for property damage, appears to me to warrant discarding the proposed large Bruneau project for consideration within the foreseeable future. A possibility exists, however, of building a smaller dam on Snake River in the vicinity of the mouth of Salmon Falls

Creek that would back the water upstream to the foot of Shoshone Falls and water could be diverted from above this dam to irrigate a portion of the Bruneau project. Snake River at this point has at present a dependable flow of about 2,800 second-feet that enters the river below Milner which would be sufficient to irrigate about 110,000 acres of the Bruneau project. This flow may be appreciably lessened by future pumping developments on the Snake River Plains. This plan has not been studied in detail as to its feasibility and although it would doubtless be quite costly per acre of land irrigated I have included 80,000 acres in the list of projects that might conceivably be built during the 50-year payout period for the Hells Canyon project, assuming some decrease in present water supply due to upstream ground-water pumping.

7. MOUNTAIN HOME PROJECT

If the high dam near Bliss heretofore proposed for the Bruneau project is discarded it will not be possible to supply the second unit of the Mountain Home project as contemplated in previous plans of the Bureau of Reclamation. Mr. W. G. Sloan has proposed a plan for irrigation of 123,000 acres of the Mountain Home project, by a combination of pumping from Snake River to Deer Flat Reservoir and ground-water pumping in Boise Valley. If this is done it would then be possible to irrigate an additional 192,000 acres from Payette-Boise River sources making a total of 315,000 acres in the Mountain Home project without use of the high diversion dam near Bliss. If this area is placed under irrigation on the Mountain Home project the ground-water levels beneath the project could very well rise to a level that would permit of ground-water pumping for the remaining 57,000 acres on the Mountain Home project heretofore proposed. Although these matters are somewhat speculative, the good quality of land and favorable location of this project appear to me to warrant the belief that some plan will eventually be devised for irrigating the full acreage of 372,000 acres.

Permits granted by the State of Idaho for ground-water pumping since interest in this subject started in 1947 are as follows:

Year	New land	Supplemental supply for lands now irrigated	Year	New land	Supplemental supply for lands now irrigated
	Acres	*Acres*		*Acres*	*Acres*
1947	12,400	7,600	1951	104,400	104,600
1948	192,600	34,200	1952	114,270	6,500
1949	39,000	73,000			
1950	75,200	18,600	Total	537,870	244,500

Figures are for the entire State, but nearly all are in the Snake River drainage area in southern Idaho. Some of these permits or water fillings are no doubt speculative and will be canceled for failure to do the development work within the time allowed by the permits. In some areas also the permits cover more land than can be irrigated from the locally available water supply. However, additional filings are being made all the time at the rate of 100,000 acres annually, and many wells are being drilled by individuals without permits. Under the provisions of the Idaho constitution water rights can be so established without requiring authorization by the State, and about 20 percent of irrigation wells drilled to date have been developed without applying to the State for a permit. Considering these various matters it appears from these water-permit figures that the total acreage of feasible ground-water pumping projects in Idaho on Snake River above Hells Canyon could possibly be as much as 700,000 acres of new land since 1947.

New land areas (acres) that might be irrigated by 2010

[Figures include developments since 1947]

Michaud Flat to Neeley (outside of Fort Hall Reservation)	25,000
Minidoka north side extension from river flow	13,000
Snake River plains ground-water pumping [1]	400,000
Minor tributaries Camas Creek to Big Wood River [1]	45,000
Fort Hall Reservation [1]	40,000
Marginal increases to existing projects [1]	15,000
Tributaries Portneuf to Salmon Falls River [1]	60,000
Bruneau project	80,000
Bruneau River	40,000
Mountain Home project [1]	372,000
Grandview pumping	18,000
Weiser River Basin [1]	25,000
Owyhee River Basin [1]	15,000
Other tributaries below King Hill [1]	20,000
Miscellaneous ground-water pumping areas not listed above [1]	132,000
Total	1,300,000

[1] All or partly ground-water pumping.

The total consumptive use of water in this area will average about 2.3 acre-feet per acre actually irrigated. Assuming that 0.3 acre-foot per acre of this will be available from precipitation now used by native vegetation and that 10 percent of the area will be occupied by roads, buildings, small rocky areas, etc., we arrive at a consumptive water use of 1.8 acre-feet per acre from sources other than local precipitation applicable to the gross acreage.

Supplemental use on currently irrigated lands either by ground-water pumping, or from storage in reservoirs such as Palisades and Anderson, will also increase the consumptive use. This is a matter that cannot be calculated with any exactness because it would be small in good water years and larger in dry years. It might be estimated roughly at 270,000 acre-feet annually which would supply 1 million acres with one-half of its consumptive use in 3 out of 10 years.

Evaporation losses on new reservoirs constructed since 1947 or proposed for new construction, in excess of water losses on the flooded areas prior to reservoir construction, will be of the magnitude of 130,000 acre-feet annually.

The sum of these three items, consumptive use of 1,300,000 acres of new lands, additional consumptive use from supplemental supply on lands now irrigated, and evaporation losses from new reservoirs will amount to about 2,740,000 acre-feet annually at the end of the 50 years Hells Canyon payout period.

If we assume that the Hells Canyon project will be completed by 1960, the end of the 50-year period would be 2010. The figures heretofore given refer to developments beginning in 1947 when the ground water pumping projects started. Probably close to 150,000 acres of new lands have already been developed since 1947, mostly from ground water pumping. Assuming a uniform rate of increase from now until 2010 the average additional consumptive use since 1947, during the Hells Canyon payout period, would be 1,650,000 acre-feet annually.

This additional consumptive use will not, however, decrease the streamflow at a uniform similar annual rate. The floodwaters in years of ample runoff will be stored in new reservoirs such as Palisades and will be fed out onto the lands in dry years. Ground water pumping will draw to some extent during dry years on water stored in the ground, with the ground water supply being replenished in wet years. As a result the streamflow at Hells Canyon will generally be depleted more than the average in wet years and less than the average in dry years.

By reference to the attached plate No. 1 it will be observed that the gain, excluding surface runoff from Big Wood River, in Snake River between Milner and King Hill has been steadily increasing during the past decade and from 1946–50 was running over 300,000 acre-feet annually greater than it was during the 1928–30 and 1938–41 periods in spite of steadily increasing irrigated acreage upstream. This would appear to be a permanent increase during the future as com-

pared to past years except as it would be modified by new upstream ground water pumping, and is doubtless due to increased canal diversions shown on the diagram. If the increased gain noted in 1951 and 1952 continued in future years the permanent gain would be greater than the 300,000 acre-feet above mentioned.

The Gooding project which began sizable diversions from Snake River in 1931 probably is responsible to a considerable extent for the increased gain as this project has contributed about 300,000 acre-feet of Snake River water annually to the ground water for a number of years past. The project had previously contributed a lesser amount when it received an inadequate water supply from Big Wood River. The recent gain is even greater if compared to the 1931–35 period but it is believed that the comparison will be more useful if made with years of similar precipitation on the plains and similar discharge from the streams whose runoff reaches the plains from the north. From plate No. 1A it will be noted that a moderate decrease in the gain occurred from 1946 to 1950. This may represent the decreased contributions from river losses and canal diversions in the upper valley above American Falls in 1931 and 1934 indicating a time of travel of around 15 years before the ground water from those sources appears in the Hagerman Valley springs. In any event the gain appears to have resumed its upward trend in 1951 and 1952.

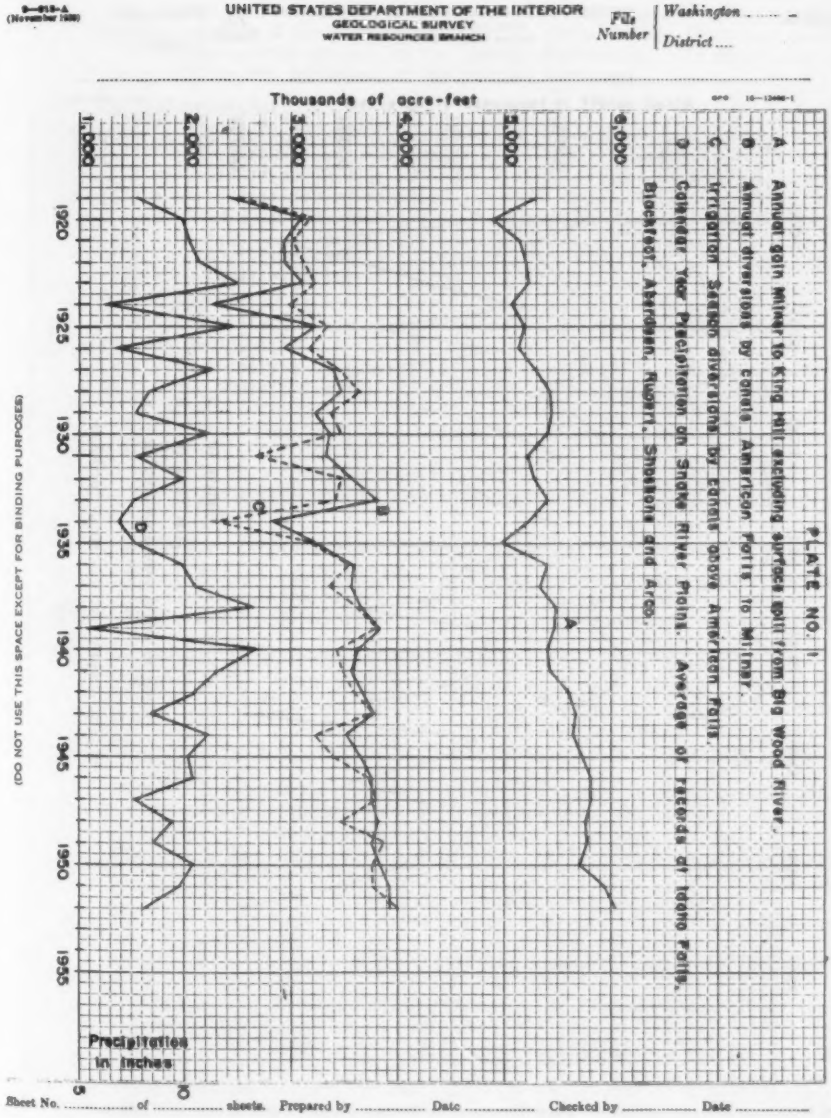
The years of critical water supply for power production at Hells Canyon occur in the period 1929–37 as shown on accompanying plate No. 2. From the middate, 1933, until 1947, when the increased consumptive use figures used herein start, there was an increase of about 200,000 acres in the irrigated area above Hells Canyon which would consume 360,000 acre-feet annually. This factor, as far as flow during low-water periods is concerned, is probably more than offset by new supplemental storage in such reservoirs as Anderson, Lucky Peak, and Palisades that will increase the river flow in low-water periods over that which occurred in the past.

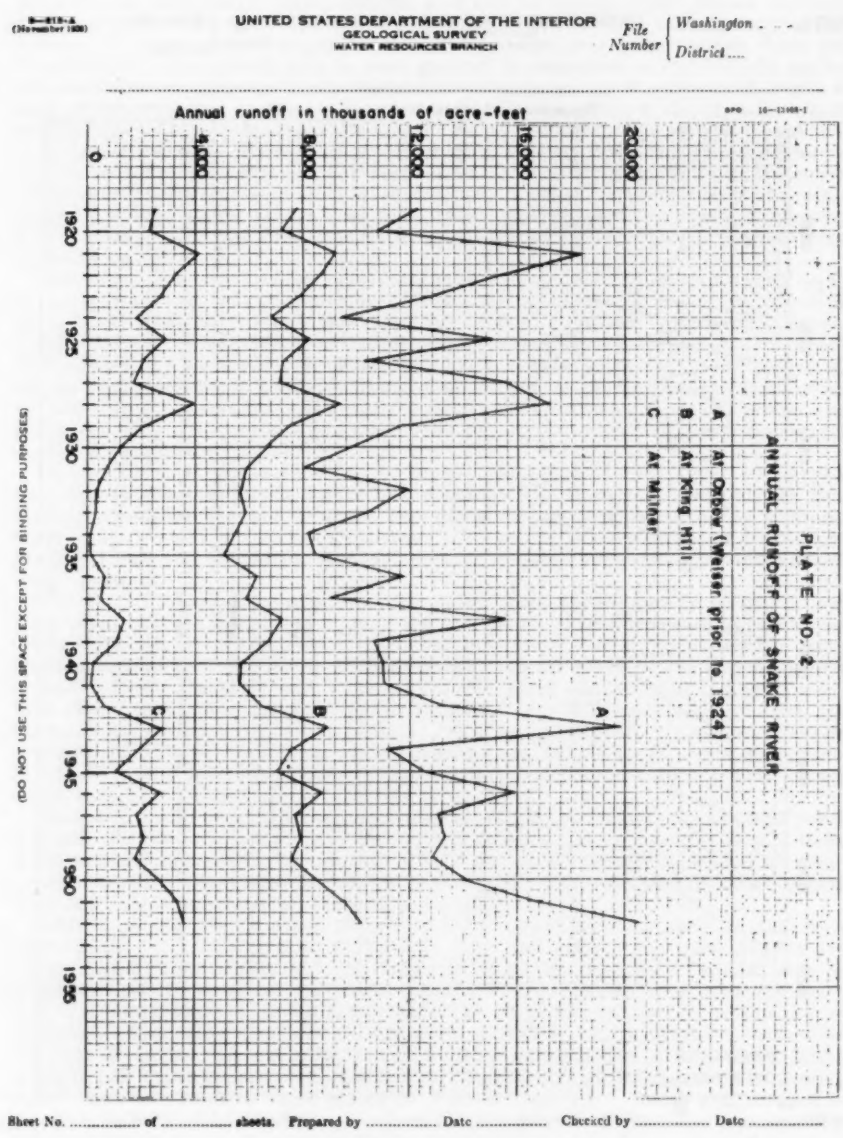
Past experience on the river has been that irrigation of new land from surface flow of the streams above return-flow sections has increased downstream flow during low-water periods. Future expansion of the irrigated area by pumping from ground water or diversion of water from the stream in or below the return-flow sections will, however, directly reduce the downstream flow during low-water periods.

The drought during the early 1930's was the most severe and prolonged of any that have occurred during the 62 past years of streamflow records on Snake River. The possibility exists that one of equal severity might not occur during the Hells Canyon payout period. If one should occur at the midpoint of the payout period, it is my opinion, considering all the matters herein discussed, that it might result in a runoff at Hells Canyon of about 1,300,000 acre-feet less annually than the historic flows that occurred in 1929–37. If a dry period of this severity should occur at the end of the payout period rather than the midpoint, with more land in cultivation, the decrease below the historic flows of 1929–37 might be of the magnitude of 2,200,000 acre-feet annually.

Except in years of well above normal runoff it is quite likely that future years will see the flow of upper Snake River controlled so as to practically eliminate spills past Milner except for storage rights owned by the Idaho Power Co. that usually require the discharge of about 155,000 acre-feet annually over Milner Dam for downstream use by the power company.

Additional storage of about 350,000 acre-feet may be developed on the river above Heise and surplus flood flows that would otherwise spill past Milner can be diverted by new canals onto the Snake River plains, allowed to spread over as large an area as possible, and be dissipated by percolation and recharge wells into the lavas, thereby replacing in part the water consumed by ground water pumping. Such a project would be expensive and would probably require Government financial aid. Similarly any surplus floodwaters of Big Wood River could in wet years be diverted onto the lava beds north of Shoshone. The ground water reservoir beneath these plains is of great capacity. Water contributed to it in the vicinity of Idaho Falls, for example, has to travel 150 miles underground before it reappears in Hagerman Valley, probably requiring a number of years to do so. Return flow from irrigation use below American Falls will of course reappear in lesser time, ranging from several months on portions of the north side canal project to perhaps a year or more from the Minidoka project. If new upstream reservoirs are built and if the surplus floodwaters are diverted to this ground water reservoir it would result in a nearly equalized flow of Snake River at King Hill with an increased flow during low-water periods and less future depletion at Hells Canyon during low-water years than the figures herein suggested.


UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH
File Number
Washington
District
Thousands of acre-feet
1,000
2,000
3,000
4,000
5,000
6,000
1920
1925
1930
1935
1940
1945
1950
1955
A
B
C
D
Precipitation in inches
0
5
PLATE NO. 1
A Annual gain minus 16 King Hill excluding surface spill from Big Wood River.
B Annual diversions by canals American Falls to Milner.
C Irrigation season diversions by canals above American Falls.
D Calendar Year Precipitation on Snake River Plains. Average of records at Idaho Falls, Blackfoot, Aberdeen, Rupert, Shoshone and Arco.
(DO NOT USE THIS SPACE EXCEPT FOR BINDING PURPOSES)
Sheet No. ..... of ..... sheets. Prepared by ..... Date ..... Checked by ..... Date .....


UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH
File Number
Washington
District
Annual runoff in thousands of acre-feet
0
4,000
8,000
12,000
16,000
20,000
1920
1925
1930
1935
1940
1945
1950
1955
A
B
C
A. At Oxbow (Water prior to 1924)
B. At King Hill
C. At Milner
ANNUAL RUNOFF OF SNAKE RIVER
PLATE NO. 2
(DO NOT USE THIS SPACE EXCEPT FOR BINDING PURPOSES)
Sheet No. ..... of ..... sheets. Prepared by ..... Date ..... Checked by ..... Date .....

STATEMENT OF EARL D. OSTRANDER, DIRECTOR OF ADMINISTRATIVE MANAGEMENT, BONNEVILLE POWER ADMINISTRATION, ON HELLS CANYON PROJECT, H. R. 4719

FINANCIAL ANALYSIS

1. Testimony on S. 1333

On May 2, 1955, at hearings held on S. 1333, a companion bill to H. R. 4719, by the Subcommittee on Irrigation and Reclamation of the Senate Committee on Interior and Insular Affairs, I presented a written statement and oral testimony on the financial aspects of the addition of the high Hells Canyon Dam and powerplant to the Federal power system in the Pacific Northwest. My testimony appears at pages 455 to 498, inclusive, of the printed hearings.

2. Revised cost estimates

The analysis originally presented to the Senate subcommittee was based on an estimate of $356,810,000 for the total construction cost of the high Hells Canyon project. At the hearings on May 2, 1955, Mr. C. I. Hoisington, Chief of the Estimates and Analysis Branch, Construction Division, Office of the Assistant Commissioner and Chief Engineer, Bureau of Reclamation, Denver, Colo., testified that the estimate had been reduced to $308,472,000 (S. hearings, p. 478). At the request of the Senate subcommittee, my financial analysis was revised to reflect the new cost estimate. The revised analysis was presented as a supplemental statement and appears at pages 484 to 489, inclusive, of the Senate hearings.

The analysis that follows in this statement uses the identical data that appeared in the supplemental statement submitted to the Senate subcommittee. Construction cost estimates now being prepared as of July 1, 1955, by the Corps of Engineers may differ somewhat from data now available and used in this statement. The cost estimates for some of the dams probably will be lower than used herein, but some may be higher. Moreover, tentative revised construction cost estimates for the Bonneville Power Administration's transmission system show a small reduction from data presently used. In my opinion, the new data will not be sufficiently different to affect conclusions that may be drawn from this analysis.

3. Scope and status of Federal power system in the Pacific Northwest

The Bonneville Power Administration has been designated the power marketing agent for 12 Federal hydroelectric generating plants existing or under construction in the Pacific Northwest. The 12 projects and their status are as follows:

1. Bonneville Dam, a Corps of Engineers project, is completed.
2. Grand Coulee Dam and powerplant, principal features of the Columbia Basin project of the Bureau of Reclamation, are completed insofar as the presently contemplated power installation is concerned. Considerable construction work remains, however, to complete the irrigation facilities of the project.
3. Albeni Falls project, of the Corps of Engineers, is substantially complete. Its storage capacity has been available to the system for about 2 or 3 years and 1 of the 3 generator units is now in service.
4. Hungry Horse project, of the Bureau of Reclamation, is completed with all four generator units in service.
5. The Detroit project, of the Corps of Engineers, is completed.
6. Big Cliff, a reregulating reservoir for the Detroit project, with one generator unit, is completed.
7. Lookout Point project, of the Corps of Engineers, with three generators in service, is completed.
8. Dexter project, a reregulating reservoir for Lookout Point Dam, with one generator unit in service, is completed.
9. McNary Dam, of the Corps of Engineers, now has in service 8 of its scheduled 14 generator units.
10. Chief Joseph project, of the Corps of Engineers, is under construction with no generator units presently in service. Three units are scheduled to be placed in service in September 1955 and the 16th unit in December 1958.

11. The Dalles project, of the Corps of Engineers, is under construction. Two units are scheduled for service in November of 1957, with the 14th unit scheduled for November 1960.

12. Chandler project, of the Bureau of Reclamation, is under construction with its 2 units scheduled for service in December 1955 and February 1956, respectively.

These 12 projects are estimated to cost upon completion $1,896,900,000, exclusive of interest during construction. This cost figure includes all features, i. e., the joint facilities, the power facilities, the navigation locks, the irrigation works, etc. Of this total cost $1,161,900,000 has tentatively been allocated to power and in addition power will pay approximately $475 million of construction cost allocated to irrigation but assigned for return from power revenues. Thus, power is scheduled to return $1,636,900,000, or 86.3 percent of the total cost of the multiple-purpose projects. In addition to these generation costs, it is estimated that the transmission system of the Bonneville Power Administration to be associated with this program will cost $530,800,000, exclusive of interest during construction.

These cost data are, in many cases, estimates which are subject to change from time to time as construction proceeds and more and more of the construction work is placed under firm contracts. It is believed, however, that these estimates reflect fairly well the probable ultimate construction cost.

4. Integrated system operations

The 12 generating plants, together with the transmission system of the Bonneville Power Administration, are operated as a single integrated system in order to produce optimum results for the system as a whole rather than for any individual project. If the projects were operated on an isolated basis the firm power capability would be much less than that obtainable from the integrated operating plan.

Downstream projects benefit from upstream storage which can be released under a controlled plan so as to increase the capability of the downstream plants during the winter months of low natural streamflow. On the other hand, a storage project, such as Hungry Horse, benefits in turn from the integration. During the winter months storage can be released to achieve increased generation at site as well as downstream. During the summer months generation can be reduced to rather nominal levels so that the reservoir may refill from the flood runoffs occurring in late spring and early summer. During the summer months when the storage reservoir is refilling, the downstream plants have increased generating capacity from the higher streamflows which can be transmitted to serve the loads in the Hungry Horse area that are served by at-site generation during the winter months. If the Hells Canyon project were added to the present Federal system a similar operating plan would be followed in order to get the maximum contribution to the system. Such an operating plan makes it possible to use the reservoirs for flood control as well as power.

5. Integrated financial analysis

Financial analyses for the system are prepared in the same integrated fashion. In other words, as a basis for determining the amount of revenues and thus rate levels required, aggregate sales and revenues for the system are considered in the light of aggregate payout requirements of the system.

In order to analyze the impact of the addition of a large new project to this system of 12 projects (which is referred to as the base system as a convenient form of reference), an analysis may be made on the so-called incremental basis. This simply means that the system with the proposed project is compared as to cost and capability with the system without the proposed project. The differences, or increments, in costs (payout requirements) and capability are attributable to the proposed new project.

6. Prior analyses of Hells Canyon project

Approximately 3 years ago, in the hearings on H. R. 5743, 82d Congress, by the Subcommittee on Irrigation and Reclamation, of the Committee on Interior and Insular Affairs, House of Representatives, I presented a detailed analysis of the cost of the Hells Canyon project as an addition to the Federal power system. The data used at that time are now obsolete in several details. For some projects more recent cost estimates are available, the allocations of cost have been revised, etc. Also, in a proceeding before the Federal Power Commission in the matter of Idaho Power Co., project Nos. 1971, 2132, and 2133 I presented

cost data relative to the Hells Canyon project in the Federal power system in the Pacific Northwest. That information was prepared a little more than a year ago. It is now obsolete in a few of the details for similar reasons.

7. Analysis for three stages of system development

In the present study, analyses are presented to show results obtained if the high Hells Canyon project were included in the Federal power system on a "last added" basis. Three different systems, i. e., stages of development, are studied. In each case, a determination is made of the system costs (payout requirements) for the system including Hells Canyon and for the system without Hells Canyon. The effect of the addition of Hells Canyon is the difference between those two sets of data for each case.

As case A, Hells Canyon is added to the base system, i. e., the projects existing or under construction. However, for the purpose of this analysis, all of the presently scheduled generator units for The Dalles, Chief Joseph, and McNary projects have not been included in the costs for case A because only the number of units required to generate the base system's prime power at the system load factor have been included. In analyzing the costs of the system after adding Hells Canyon, additional units required at these plants are included as an increment of cost attributable to the addition of Hells Canyon to the system. On this basis the base system without Hells Canyon is estimated to have annual payout requirements of $53,545,000 for generation and $30,170,000 for transmission, a total of $83,715,000. The system has a prime power capability of 3,825,000 kilowatts, which is equivalent to salable firm power of 4,980,000 kilowatts on the basis of a 75 percent load factor, 7 percent losses, and a 1.05 diversity factor. The salable firm power is the important basis for analysis because it represents the power that the Administration can contract to deliver to customers' meters on a firm basis. Accordingly, the generation payout cost per salable firm kilowatt is $10.75 and the transmission is $6.06, making a total of $16.81 per firm kilowatt.

Subtraction of these basic data from comparable data for a system consisting of the base system plus Hells Canyon shows that the amounts added by Hells Canyon are as follows:

Generation costs		$13,744,000
Transmission costs		$8,030,000
System prime power capacity	kilowatts	895,000
Equivalent salable firm power	do	1,165,000
Generation costs per firm kilowatt		$11.80
Transmission costs per firm kilowatt		6.89
Total per firm kilowatt		18.69

Accordingly, the increment of capability costs somewhat more per unit than does the capability of base system without Hells Canyon. However, since the base to which the increment is added is so large, the averages for the system, including Hells Canyon, are not much greater than the averages for the base system. Specifically, for the system including Hells Canyon the total payout requirement per firm kilowatt is $17.17, consisting of $10.95 for generation and $6.22 for transmission. Summary data for case A are shown in table A.

These unit cost data are not necessarily indicative of the power rate levels required. In this study, the total payout requirements have been related only to firm power. In addition, substantial revenues may be obtained from the sale of secondary energy and from miscellaneous activities. Accordingly, firm power rates probably could be somewhat lower on the average than these unit values.

As case B, Hells Canyon may be analyzed on the basis of its being an addition to the so-called phase C–2 system, including the low dam at the Libby project, having 4,250,000 acre-feet of usable storage.[1] On this basis Hells Canyon is estimated to increase system prime power capability by 1,122,000 kilowatts, equivalent to 1,461,000 kilowatts of salable firm power on the same assumptions as before as to losses, load factor, and diversity.

[1] The phase C–2 level of development as used in this study includes 15 major projects and 19 minor ones. Glacier View, once considered for phase C–2, is not included.

In this case the unit costs for the increment of capability added by Hells Canyon are somewhat lower than unit costs for the system without Hells Canyon. Here, again, however, the base to which the increment is added is so large that the averages for the system including Hells Canyon are not materially different from those for the system without Hells Canyon. Summary data for case B are given in table B.

As case C, Hells Canyon may be analyzed as an addition to the phase C–2 system of development, but with the high project at Libby with 6,483,000 acre-feet of usable storage.

In cases A and B the prime power capability of the system is determined on the basis of water conditions during the 1936–37 water year, the most critical single year of record. However, with the high Libby project assumed for case C, and with the Hells Canyon project added to the system, that critical year is no longer controlling. Instead the period of approximately 4 years, from September 1928 to March 1932, inclusive, determines the system prime power capability inasmuch as the cyclical nature of the storage refill operation becomes dominant. For case C the results are summarized in table C.

Under the assumptions of case C, Hells Canyon would make a smaller contribution to the system's power capability than was found in case B. The unit costs in case C for the increment added by Hells Canyon are slightly lower for generation and slightly higher for transmission than the unit costs for the system without Hells Canyon but are almost identical as to the total of generation and transmission costs. Again, however, the unit costs for the system including Hells Canyon are not materialy different from those for the system without Hells Canyon.

In summary, as I stated at the hearings 3 years ago on H. R. 5743, 82d Congress, and at the Federal Power Commission hearings last year on the license applications of the Idaho Power Co., in my opinion, on the basis of data made available for financial analysis, the Hells Canyon project would be financially sound as an addition to the integrated Federal power system in the Pacific Northwest, and the addition of the project to the Federal system would not adversely affect the power rate levels required.

8. Average annual costs (payout requirements) per kilowatt-hour

Table D shows the average annual costs (payout requirements) in mills per kilowatt-hour for each of the three cases analyzed in this study. Data are shown in each case for the system without Hells Canyon, for the increments added by Hells Canyon, and for the total system including Hells Canyon. These data have been obtained by dividing the costs per kilowatt of prime power as shown in tables A, B, and C, by 8,147 kilowatt-hours, representing 1 kilowatt-year of prime power (8,760 kilowatt-hours) less 7 percent for losses in order to arrive at cost per kilowatt-hour delivered to customers' meters. Since the analysis is based upon total costs but related to just prime power capability, any material volume of secondary energy sales would serve to reduce the costs per kilowatt-hour for total electrical energy production by any of the systems analyzed. However, for the purposes of this analysis, namely, to obtain comparative data, it is believed that an analysis, as here presented, restricted to prime power only produces satisfactory comparative results.

For the system now in operation or under construction costs average about 2¾ mills per kilowatt-hour either with or without Hells Canyon. The total consists of approximately 1¾ mills for generation and 1 mill for transmission.

For the larger phase C–2 systems analyzed as cases B and C, the overall system costs exceed 3 mills per kilowatt-hour on the average, consisting generally of a little over 2 mills for generation and a little over 1 mill for transmission.

In all cases, as previously noted in connection with tables A, B, and C, the overall average system costs for systems including Hells Canyon differ little from the overall average costs for the same system without Hells Canyon.

9. Estimated capital investment added by Hells Canyon project

Table E summarizes for each of the three cases analyzed the estimated additional capital investment that would be required if the high Hells Canyon project were added to the Federal system. Data are shown for the capital investment (i. e., construction costs plus interest during construction) for (*a*) additional generator units required at downstream or other plants in the system, (*b*) for the Hells Canyon project itself, and (*c*) for the transmission facilities required

to market the additional power produced both at Hells Canyon and other plants in the system.

Additional capital investment for generation is approximately 324 to 350 million dollars, depending upon the system under consideration, exclusive of $49 million of the capital costs of the Hells Canyon project allocated to nonpower purposes. The capital investment required for transmission ranges from approximately 130 to 146 million dollars again depending upon which system is under consideration.

The total capital investment required for both generation and transmission thus is approximately $454 million if Hells Canyon were added to the present system of 12 projects and approximately $495 million if Hells Canyon were added at a much later future date as the last project in the phase C–2 stage of development. These totals exclude $49 million in each case of nonpower capital investment for the Hells Canyon project. Including the latter item, the aggregate capital investment ranges from 503 to 544 million dollars. Details and more precise figures are available in table E.

TABLE A.—*Summary schedule for case A addition of Hells Canyon project to the base system*

[Revised May 17, 1955, to reflect reduction in estimated construction cost of Hells Canyon project from $356,810,000 to $308,472,000]

Item	Unit	System total without Hells Canyon	Added by Hells Canyon	System total with Hells Canyon
Average annual payout requirements:				
For generation	Thousand dollars	53,545	13,744	67,289
For transmission	do	30,170	8,030	38,200
Total	do	83,715	21,774	105,489
System prime power capability	Thousand kilowatts.	3,825	895	4,720
Equivalent salable firm power	do	4,980	1,165	6,145
Annual payout requirements per kilowatt of prime:				
Generation	Dollar	14.00	15.36	14.26
Transmission	do	7.89	8.97	8.09
Total	do	21.89	24.33	22.35
Annual payout requirements per kilowatt of salable firm:				
Generation	do	10.75	11.80	10.95
Transmission	do	6.06	6.89	6.22
Total	do	16.81	18.69	17.17

NOTES.—1. The "base system" consists of the 12 projects existing or under construction for which the Bonneville Power Administration is the power marketing agent, together with the related transmission system. The cost data include only the number of generation units at Chief Joseph, McNary and The Dalles required to generate prime power capability at the system load factor. Specifically, the number of units is:

	In col. (3)	Added in col. (4)	In col. (5)
At Chief Joseph	12	2	14
At McNary	9	2	11
At The Dalles	10	4	14

The cost of the added units is assigned to the additional system power capability attributed to Hells Canyon.

2. Prime power is power available under the most adverse water conditions of record. 1 kilowatt of prime power represents 8,760 kilowatt-hours in 1 year.

3. Salable firm power is the amount that can be delivered to customers under firm contracts from the stated prime power after giving effect to 7 percent losses, 75 percent load factor, and 1.05 diversity factor.

TABLE B.—*Summary schedule for case B addition of Hells Canyon to the phase C–2 system with 4,250,000 acre-feet of usable storage at the Libby project*

[Revised May 17, 1955, to reflect reduction in estimated construction cost of Hells Canyon project from $356,810,000 to $308,472,000]

Item	Unit	System total without Hells Canyon	Added by Hells Canyon	System total with Hells Canyon
Average annual payout requirements:				
For generation	Thousand dollars	117,417	15,028	132,445
For transmission	do	59,430	9,270	68,700
Total	do	176,847	24,298	201,145
System prime power capability	Thousand kilowatts	6,715	1,122	7,837
Equivalent salable firm power	do	8,743	1,461	10,204
Annual payout requirements per kilowatt of prime:				
Generation	Dollar	17.49	13.39	16.90
Transmission	do	8.85	8.26	8.77
Total	do	26.34	21.65	25.67
Annual payout requirements per kilowatt of salable firm:				
Generation	do	13.43	10.29	12.98
Transmission	do	6.80	6.35	6.73
Total	do	20.23	16.64	19.71

NOTES.—1. The phase C–2 system as used in this study includes 14 major projects other than Hells Canyon and 19 minor projects. Glacier View, a major project originally contemplated as part of the C–2 phase of development is not included. The 15 major projects are Hungry Horse, Albeni Falls, Grand Coulee, Libby, Hells Canyon, Chief Joseph, Ice Harbor, Lower Monumental, Little Goose, Lower Granite, McNary, John Day, Priest Rapids, The Dalles, and Bonneville. The 19 minor projects include 8 in the Willamette Valley, 2 in the Yakima Valley, and 9 in the Upper Snake Basin.

2. Prime power is power available under the most adverse water conditions of record. One kilowatt of prime power represents 8,760 kilowatt-hours in 1 year.

3. Salable firm power is the amount that can be delivered to customers under firm contracts from the stated prime power after giving effect to 7 percent losses, 75 percent load factor, and 1.05 diversity factor.

4. Additional generator units added on account of Hells Canyon are:

Project	Without Hells Canyon	Added by Hells Canyon	Total with Hells Canyon
Chief Joseph	16	2	18
Ice Harbor	3	1	4
John Day	12	1	13
Little Goose	3	1	4
Lower Granite	3	1	4
Lower Monumental	3	1	4
McNary	13	1	14
Priest Rapids	16	2	18
The Dalles	13	2	15
Hells Canyon		8	8

TABLE C.—*Summary schedule for case C addition of Hells Canyon to the phase C–2 system with 6,483,000 acre-feet of usable storage at the Libby project*

[Revised May 17, 1955, to reflect reduction in estimated construction cost of Hells Canyon project from $356,810,000 to $308,472,000]

Item	Unit	System total without Hells Canyon	Added by Hells Canyon	System total with Hells Canyon
Average annual payout requirements:				
For generation	Thousand dollars	119,576	14,987	134,563
For transmission	do	60,900	9,100	70,000
Total	do	180,476	24,087	204,563
System prime power capability	Thousand kilowatts.	7,156	961	8,117
Equivalent salable firm power	do	9,317	1,251	10,568
Annual payout requirements per kilowatt of prime:				
Generation	Dollars	16.71	15.60	16.58
Transmission	do	8.51	9.47	8.62
Total	do	25.22	25.07	25.20
Annual payout requirements per kilowatt of salable firm:				
Generation	do	12.83	11.98	12.73
Transmission	do	6.54	7.27	6.63
Total	do	19.37	19.25	19.36

NOTES.—1. The phase C–2 system as used in this study includes 14 major projects other than Hells Canyon and 19 minor projects. Glacier View, a major project originally contemplated as part of the C–2 phase of development, is not included. The 15 major projects are Hunary Horse, Albeni Falls, Grand Coulee, Libby, Hells Canyon, Chief Joseph, Ice Harbor, Lower Monumental, Little Goose, Lower Granite, McNary, John Day, Priest Rapids, The Dalles, and Bonneville. The 19 minor projects include 8 in the Willamette Valley, 2 in the Yakima Valley and 9 in the Upper Snake Basin.

2. Prime power is power available under the most adverse water conditions of record; 1 kilowatt of prime power represents 8,760 kilowatt-hours in 1 year.

3. Salable firm power is the amount that can be delivered to customers under firm contracts from the stated prime power after giving effect to 7 percent losses, 75 percent load factor and 1.05 diversity factor.

4. Additional generator units added on account of Hells Canyon are:

Project	Without Hells Canyon	Added by Hells Canyon	Total with Hells Canyon
Chief Joseph	17	1	18
Ice Harbor	3	1	4
John Day	12	1	13
Little Goose	3	1	4
Lower Granite	3	1	4
Lower Monumental	3	1	4
McNary	13	1	14
Priest Rapids	20	3	23
The Dalles	13	2	15
Hells Canyon	----------	8	8

TABLE D.—*Average annual costs (payout requirements) in mills per kilowatt-hour (based on at-site costs and prime power generation after allowances of 7 percent for losses)*

[Revised May 17, 1955, to reflect reduction in estimated construction cost of Hells Canyon project from $356,810,000 to $308,472,000]

	Case A			Case B			Case C		
	Without Hells Canyon	Added by Hells Canyon	With Hells Canyon	Without Hells Canyon	Added by Hells Canyon	With Hells Canyon	Without Hells Canyon	Added by Hells Canyon	With Hells Canyon
Generation	1.72	1.89	1.75	2.15	1.64	2.07	2.05	1.91	2.04
Transmission	.97	1.10	1.00	1.09	1.01	1.07	1.04	1.16	1.06
Total	2.69	2.99	2.75	3.24	2.65	3.14	3.09	3.07	3.10

TABLE E.—*Estimated capital investment added by Hells Canyon (raevised May 17, 1955, to reflect reduction in estimated construction cost of Hells Canyon project from $356,810,000 to $308,472,000)*

[Thousands of dollars]

Line No.	Item	Case A	Case B	Case C
1	Generation:			
2	Downstream plants:			
3	At Chief Joseph	(2) 9,738	(2) 10,250	(1) 5,125
4	At Ice Harbor		(1) 5,711	(1) 5,711
5	At Little Goose		(1) 7,084	(1) 7,084
6	At Lower Granite		(1) 6,598	(1) 6,598
7	At Lower Monumental		(1) 6,465	(1) 6,465
8	At John Day		(1) 6,355	(1) 6,355
9	At McNary	(2) 10,250	(1) 5,125	(1) 5,125
10	At Priest Rapids		(2) 10,250	(3) 15,375
11	At The Dalles	(4) 25,952	(2) 12,976	(2) 12,976
12	Subtotal	45,940	70,814	70,814
13	At Hells Canyon (only amount allocated to power)	278,542	278,542	278,542
14	Subtotal for generation	324,482	349,356	349,356
15	Transmission:			
16	Southern Idaho and system integration	68,200	68,200	68,200
17	Main system additions	8,700	8,700	8,700
18	For additional downstream generation	52,600	69,100	66,800
19	Subtotal for transmission	129,500	146,000	143,700
20	Total generation and transmission	453,982	495,356	493,056
21	Hells Canyon nonpower	49,069	49,069	49,069
22	Line 14 would be if line 21 added	373,551	398,425	398,425
23	Line 20 would be if line 21 added	503,051	544,425	542,125

NOTE.—Figures in parentheses indicate number of generator units added.

SCRIVER CREEK POWER FACILITIES, PAYETTE UNIT, MOUNTAIN HOME DIVISION, SNAKE RIVER PROJECT, IDAHO

(Submitted by Elwyn L. White)

The Scriver Creek power facilities include the upper Scriver Creek powerplant with an installed generating capacity of 37,500 kilowatts, and the lower Scriver Creek powerplant with an initial installed generating capacity of 60,000 kilowatts, with provision for future installation of 2 additional generatng units of 30,000-kilowatt capacity each. Also included are the incidental facilities, among which are the existing Cascade Reservoir, Smiths Ferry diversion dam and reservoir, Smiths Ferry-Scriver Creek Tunnel, Scriver Creek Dam and Reservoir, Scriver Creek-Garden Valley Tunnel, and the necessary switchyards and transmission lines to deliver the power generated by the project powerplants to the Idaho Power Co.'s 138-kilovolt lines in the vicinity of Eagle, Idaho. Extension of the facilities to include the Garden Valley Dam, Reservoir, and powerplant

(60,000-kilowatt capacity) would allow for the immediate installation of an additional 30,000-kilowatt generating unit at the lower Scriver Creek powerplant. This addition would bring the total initial generating capacity of this plant to 90,000 kilowatts as described in the report of the Commissioner of Reclamation approved by the Secretary on May 11, 1951.

GENERAL DESCRIPTION

Complete irrigation development of the Mountain Home Desert in southwestern Idaho, east and southeast of Boise, containing some 400,000 acres of potentially irrigable land, will require water from several sources. Sources of water supply proposed at various times include (1) diversion of surplus water from Payette River, (2) pumping ground water in the Boise Valley for exchange for surface waters of the Boise River, (3) pumping from Snake River into Lake Lowell in exchange for Boise River water, (4) pumping from Snake River for direct application on the land, and (5) diversion of surplus water from Salmon River either through the Payette River or into the Boise River.

The amount of land ultimately developed in the Mountain Home area will depend upon the amount of water which can be obtained from the several sources and the cost of obtaining such water. In all proposed plans for irrigation, the cost of putting the water on the land has exceeded the cost which could be repaid in 40 or 50 years by the irrigators alone. Water released from Cascade Reservoir, the principal storage facility on the Payette River, loses over 2,200 feet in elevation before being diverted for irrigation. The incorporation of power facilities has been considered in order to (1) make incidental use of the water as it passes downstream for irrigation; (2) to provide an economical source of power for irrigation pumping; and (3) through the sale of surplus energy, provide a source for return of costs beyond the ability of the irrigators to repay. The facilities proposed are, except for minor modifications, the same as the corresponding facilities proposed for the Payette unit, Mountain Home project in House Document 473, 81st Congress, 2d session.

NEED FOR DEVELOPMENT

There is a need in southern Idaho for additional electrical energy at the present time, and power from the proposed facilities will find a ready market. One of the more urgent needs for power is for energy during the summr months for irrigation pumping. The proposed facilities are well suited to supply this need, as maximum power can be produced during the summer months if desired.

The Scriver Creek power facilities will, upon completion of repayment of the capital costs required for their construction, provide an annual net return of $2,033,800 which would be available for financial assistance to potential irrigation development in the central and upper Snake River Basin.

Cascade Reservoir on North Fork of Payette River was constructed to a capacity of 650,000 acre-feet in order to fully develop the storage potential of the stream and to provide the regulation needed for the fullest utilization of the available water for irrigation. Not all of the capacity is needed for presently developed irrigation in the Payette River Valley and repayment of the cost associated with the excess capacity has been deferred. The development of the facilities proposed herein will provide an interim use of the presently unused capacity and insure the return of the deferred costs to the Treasury.

WATER SUPPLY AND UTILIZATION

Runoff of the North Fork of the Payette River at Smiths Ferry has ranged from 352,000 acre-feet in 1931 to 1,324,000 acre-feet in 1943 and averaged 790,000 acre-feet during the 25-year period 1922–46, inclusive. During the period covered by the water supply study, the 10-year period of minimum average runoff was from 1928 through 1937.

Cascade Reservoir, usable capacity 650,000 acre-feet, so completely regulates the North Fork of the Payette River as to permit maximum utilization of its flow for power production in a period of years of low-average runoff. During the period from July 1928 to April 1938, for example, the flow of the North Fork would have been regulated to the extent that about 564,000 acre-feet annually would have been diverted through the powerplants. Of the remaining flow, 36,000 acre-feet annually would have been permitted to flow down the North Fork below Smiths Ferry for fish preservation, and an average of only 13,000 acre-feet annually would have spilled at Smiths Ferry in excess of the minimum fish requirements.

The monthly distribution of the usable flow of the North Fork is dependent to some extent upon the fact that irrigation projects in the lower Payette River Valley holds rights to the natural flow and to storage in small reservoirs above and below Cascade Reservoir. They, therefore, demand the natural flow and release their storage to complement the natural flow in meeting the irrigation requirements. Furthermore, part of the storage in Cascade Reservoir is required to meet the irrigation requirement of the Payette Division of the Boise project and some will probably be purchased by the older irrigation interests in the lower Payette Valley. Regulation of North Fork flows at Cascade Reservoir is also affected by a 200 cubic foot per second power right held by the Idaho Power Co. for their plant at Cascade.

It is proposed to release 50 cubic feet per second at Smiths Ferry Diversion Dam for the protection of fishlife in the North Fork of the Payette River below that point.

The Payette Division of the Boise project has contracted to repay costs associated with and allocated to 240,000 acre-feet of storage in Cascade Reservoir. Under this contract the division will acquire the use of 125,000 acre-feet of preferred capacity (a preferential right to the first storable flow each season) plus 115,000 acre-feet of the remaining capacity of about 525,000 acre-feet to which the additional storable flow is prorated. Although none of the 160,000 acre-feet of Deadwood Reservoir storage capacity has been contracted for irrigation use, it is expected that all of this space will eventually be acquired by present irrigators. Water supply studies for the irrigation of the Payette Valley utilizing storage in Cascade and Deadwood Reservoirs as discussed above show that the requirements of the presently irrigated Payette Valley lands could have been met in all years.

Power operation studies are based on the assumption that the above-described irrigation requirements will be met from natural flows and operation of the storage allocated for that purpose. With the exception of 50 cubic feet per second release below Smiths Ferry diversion dam for fish protection, all releases for irrigation will be diverted through the Schiver Creek powerplant, however, and will be augmented as necessary by additional releases for power from the remaining 410,000 acre-feet of storage in Cascade Reservoir. Unless other arrangements are made with the Idaho Power Co., a minimum release of 200 cubic feet per second would be maintained at Cascade Dam during filling periods to meet the requirement of the Cascade powerplant. Under the foregoing criteria, average annual diversions for power amounting to almost 600,000 acre-feet could have been made throughout the 25-year period 1922–46, with an average of about 564,000 acre-feet diverted annually during the 10-year low period 1928–38.

Firm power production is considered to be that which could be maintained throughout the period 1928–32, which was the most critical in the Boise-Payette area, with the water supply available. It is, therefore, a most conservative estimate of firm power production and would still be applicable on a regionwide basis regardless of total power development. With present and authorized development of power facilities, the most critical year for power production within the Columbia River Basin is 1936–37, and the period 1934–35 is the most critical within the Snake River area. During these latter periods the plants would produce additional power which could be used to firm up the output of other plants in a regional or area system.

PLAN OF DEVELOPMENT (SCRIVER FACILITIES)

Cascade Reservoir

The water supply system would begin at Cascade Reservoir, on the North Fork of the Payette River. This reservoir, completed by the Bureau of Reclamation in 1948 as a facility of the Boise project, has an active storage of 650,000 acre-feet. Of this capacity, 410,000 acre-feet are surplus to the estimated potential irrigation needs of Payette Valley and are therefore considered to be available for use for best power production. Provision has been made to supply water to the small existing hydroelectric plant of the Idaho Power Co. located immediately downstream from Cascade Dam, and also for possible development of the remaining power potential at this site, if and when it should became desirable.

Smiths Ferry diversion dam and reservoir

Smiths Ferry diversion dam would be constructed on the North Fork of the Payette River in section 26, T. 11 N., R. 3 E., Boise meridian, Idaho, about 3 miles below the settlement of Smiths Ferry. The dam would be a concrete gravity type rising 35 feet above the riverbed and 71 feet above bedrock. Radial

gates would control the operating water surface between elevations 4,500 feet and 4,528 feet above sea level. A fish ladder and basic recreational facilities are included in the plans. The reservoir would impound 2,600 acre-feet of water. This storage capacity would permit peaking operation of the powerplants on Scriver Creek and facilitate operation of the Smiths Ferry-Scriver Creek Tunnel under ice conditions.

Smiths Ferry-Scriver Creek Tunnel

A concrete-lined, pressure tunnel would convey waters diverted at the Smiths Ferry Dam under the intervening divide to Scriver Creek, a tributary of the Middle Fork of the Payette River. The inlet to the tunnel would be from the bottom of the reservoir above the diversion dam. A vertical lift gate, trashrack, and fish screens would be provided at the inlet near the left abutment of the dam. The tunnel would be 13 feet in diameter and about 4.6 miles in length, with a capacity of 1,385 cubic feet per second. It would connect with the penstocks of the upper Scriver Creek powerplant. The reservoir behind Smiths Ferry diversion dam would thus serve as the forebay for the upper Scriver Creek powerplant.

Scriver Creek powerplants

Two powerplants would be constructed on Scriver Creek to utilize the 1,280-foot difference in elevation between the North Fork of the Payette River at Smiths Ferry and that of Scriver Creek at the lower powerplant site. The upper powerplant would have a hydraulic capacity of 1,385 cubic feet per second. The installed capacity would be 37,500 kilowatts, with three 12,500-kilowatt units operating under an average net head of 410 feet. Three 6-foot diameter steel penstocks 1,200 feet in length would carry water from the diversion tunnel to the powerplant. Discharges from the upper plant would be reregulated in Scriver Creek Reservoir. The lower powerplant would be on Scriver Creek at the high-water line of the potential Garden Valley Reservoir and below the proposed Scriver Creek Reservoir. The outlet tunnel from Scriver Creek Reservoir, with a capacity of 2,300 cubic feet per second, would connect to a surge tank and two 6-foot diameter steel penstocks. They would be approximately 2,900 feet long, with a total capacity of 1,150 cubic feet per second. The initial installed generating capacity would be 60,000 kilowatts, with two 30,000-kilowatt units operating under an average net head of 805 feet. Provision would be made in the foundation of the powerhouse building for the future installation of two additional generating units of 30,000 kilowatt capacity at such time as needed for coordinated operation with other powerplants of the area. At such time as the Garden Valley Dam, Reservoir, and powerplant are constructed, one of the additional units would be required immediately for peaking purposes.

Scriver Creek Dam and Reservoir

The Scriver Creek Reservoir would be located on Scriver Creek below the upper powerplant. The purpose of this reservoir would be mainly to reregulate the outflow to the lower powerplant. Such reregulation would permit peaking operation of the upper plant in adjustment to peak power loads. The reservoir also would provide storage for use when the inflow to the upper powerplant is interrupted. The reservoir would have a total storage capacity of 6,900 acre-feet, of which 5,000 acre-feet would be available as live storage for reregulating purposes. Scriver Creek Dam, creating the reservoir, would be an earth-fill with crest elevation of 4,086 feet above sea level, 168 feet above streambed, and with a crest length of 575 feet. Spills would be handled through a glory-hole type spillway. Basic recreational facilities are included in the plans.

Scriver Creek-Garden Valley tunnel

Diversions from Scriver Creek Reservoir to the lower powerplant would be made through a concrete-lined pressure-tunnel outlet with a capacity of 2,300 cubic feet per second. Sufficient capacity is provided for an ultimate installation of four units in the lower Scriver Creek powerplant. A tunnel headworks structure with a bulkhead gate and fish screens would be located on the east shoreline of the reservoir, about 1,800 feet upstream from the dam. The tunnel would be 16.5 feet in diameter and 6,925 feet long. About 1,300 feet of this length would be a cut-and-cover section. The tunnel would connect with the surge tank and penstocks of the lower powerplant.

Transmission system and switchyards

The facilities required to deliver the power generated by the project powerplants to the Idaho Power Co. 138-kilovolt lines in the vicinity of Eagle, Idaho, would be provided.

Project costs

The estimated costs for construction of the various features proposed for development, at January 1955 price levels, are:

Smiths Ferry diversion dam and reservoir	$1,393,000
Smiths Ferry-Scriver Creek tunnel	11,354,000
Upper Scriver Creek powerplant	6,981,000
Scriver Creek Dam and Reservoir	2,688,000
Scriver Creek-Garden Valley tunnel	4,500,000
Lower Scriver Creek powerplant	12,608,000
Switchyards and transmission lines	5,057,000
General property	1,353,000
Total estimated construction cost	45,934,000
Interest during construction	2,800,000
Total Federal investment	48,734,000
Less nonreimbursable costs for fish and wildlife and recreation	258,000
Repayable Federal investment	48,476,000
Unassigned cost of Cascade Reservoir	4,658,000
Capital cost assigned to commercial power for repayment	52,134,000

The annual cost for interest and amortization in 50 years, assuming 100 percent allocation to commercial power, would be $1,873,500. The annual costs for operation, maintenance, and provision for replacements are estimated at $532,200, thus resulting in a total annual cost of $2,405,700. If a part of the cost is allocated to irrigation pumping power on an interest-free basis, the annual cost would be somewhat less.

Power production

The upper Scriver Creek powerplant (37,500 kilowatts) would meet daily peaking requirements through the use of Smiths Ferry Reservoir pondage. Operating with a net head of 410 feet and 85 percent efficiency, annual output of the plant would average about 214 million kilowatt-hours of energy.

The lower Scriver Creek powerplant (60,000 kilowatts) would be substantially a base load plant utilizing practically constant flows during the irrigation season since it will not be possible to reregulate daily fluctuations at Black Canyon Reservoir. It would have a net head of 805 feet under average conditions. At 85 percent operating efficiency, the annual output would be 421 million kilowatt-hours.

The combined output from the 2 plants would be 635 million kilowatt-hours annually. Of the total amount, approximately 555 million kilowatt-hours would be firm, 22 million kilowatt-hours would be offpeak power, and 58 million kilowatt-hours would be dump power. Potential firm power production has been reduced by approximately 20 million kilowatt-hours because of the necessity for operating the lower Scriver Creek powerplant as a base load plant without daily fluctuations. This is also the limiting factor in determining the summer peaking capability.

Power value

Studies by the San Francisco office of the Federal Power Commission show that the value of power at site in southern Idaho, computed on the basis of replacing power which could be generated in the Hells Canyon reach of the Snake River and marketed by the west group of the Pacific Northwest power pool, would be $14.14 per kilowatt of dependable capacity plus 3.29 mills per kilowatt-hour of energy. The studies further show that after about 1975 the demand for power in the southern Idaho market area will exceed the supply available in the area and in prospect from the Hells Canyon reach of the Snake River and at that time the value of power at site would be $21.45 per kilowatt of dependable capacity plus 4.39 mills per kilowatt-hour of energy.

Assuming that the Scriver Creek power facilities are constructed and in operation around 1960, the lower value of power would be applicable for a period of 10 to 15 years, and the higher value for the remainder of the project life. Based on present worth of future values, the resulting value of power at site during the payout period would be $18.62 per kilowatt of dependable capacity plus 3.96 mills per kilowatt-hour of firm energy. Secondary energy

would have a value of about 3.9 mills at site. Using these values, the average annual value of power from these facilities would be $4,325,000.

Benefit-cost ratio

The annual cost presented previously, amounting to $2,405,700, includes transmission facilities to interconnect with the Idaho Power Co. lines at Eagle, Idaho. Since at-site values are used as the measure of benefits, annual at-site costs, amounting to $2,290,500 without the interconnection transmission facilities, are used for comparison. The tax component forgone by Federal development amounts to $5.25 per kilowatt of dependable capacity or $512,000 per year. The addition of the tax component to the at-site costs results in a total cost of $2,802,600. Using the previously determined value of power ($4,325,000) as a measure of the annual benefits and the at-site annual costs, including the tax component, the benefit-to-cost ratio is 1.54 to 1.

Power market

The Federal Power Commission studies show that at the present time there is a power deficiency in the southern Idaho area of 103,687 kilowatts of average energy and 206,840 kilowatts of capacity. The plants proposed herein would supply about 47 percent of the energy and capacity requirements needed immediately. The studies also show that even with development of the Hells Canyon reach of Snake River there will be a power deficiency in the southern Idaho area by 1975 and that there is a market for any surplus power from this area in the service area of the west group of utilities in the Northwest power pool.

Financial feasibility

In present negotiations for the sale of Palisades power and enery, it appears that the application of the proposed firm power rates for the Palisades project will result in an average return of about 4.7 mills for firm energy. In these same negotiations for sale of surplus Palisades power and energy to the Idaho Power Co. and the Utah Power & Light Co. it is proposed to sell seasonal offpeak energy at 2.6 mills and dump energy at 2 mills. Using the values of 4.70 mills for the 555 million kilowatt-hours of firm energy, 2.6 mills for 22 million kilowatt-hours offpeak energy, and 2 mills for the 58 million kilowatt-hours of dump energy, after allowance for losses and assuming 75 percent of the dump would be salable, the average annual revenue would be $2,566,000. This amount would be sufficient to pay annual operation and maintenance costs, provide for replacements as they are required, and repay the capital costs of the development, including the deferred costs of Cascade Reservoir, with interest at 2.5 percent within 43 years.

PLAN OF DEVELOPMENT (SCRIVER FACILITIES PLUS GARDEN VALLEY DAM, RESERVOIR, AND POWERPLANT)

Inclusion of the Garden Valley Dam, Reservoir, and powerplant in the overall Scriver Creek power faciilties would allow for the immediate installation at the lower Scriver Creek powerplant of a third 30,000-kilowatt generating unit. This addition would bring the initial total installed generating capacity at the lower Scriver Creek plant to 90,000 kilowatts as described in the report of the Commissioner of Reclamation, approved by the Secretary May 11, 1951. This additional unit can be utilized since construction of the Garden Valley Dam and Reservoir would provide reregulation below the lower Scriver Creek powerplant. This reregulation would allow use of the lower Scriver Creek plan for peaking purposes. Without the Garden Valley Dam, the lower Scriver Creek plant would have to be operated utilizing irrigation releases without daily peaking fluctuations.

Garden Valley Dam and Reservoir

Garden Valley Reservoir would impound waters of both the South and Middle Forks of the Payette River and reregulate releases from Cascade after passing through the Scriver Creek powerplant. Garden Valley Dam would be located on the Payette River about 3.2 miles above the confluence with the North Fork and 3.8 miles below the mouth of the Middle Fork. The maximum water surface would be at elevation 3,266 feet. The total reservoir capacity would be 1,550,000 acre-feet, of which at least 843,000 acre-feet would be active capacity. Garden Valley Dam would be a concrete arch with a crest elevation of 3,271 feet above sea level and a maximum height of about of about 440 feet, some 370 feet above stream bed. Spills would be handled through a vertical shaft spillway controlled by a 10- by 60-foot ring gate.

Garden Valley powerplant

A 60,000-kilowatt capacity hydroelectric powerplant would be constructed at the toe of Garden Valley Dam. This plant would consist of 4 15,000-kilowatt units.

Estimated costs

Estimated costs, at January 1955 prices, for construction of Garden Valley Dam Reservoir, and powerplant are:

Garden Valley Dam and Reservoir	$23, 878, 000
Garden Valley powerplant	7, 049, 000

This addition to the Scriver Creek power facilities would also alter the estimated costs for the overall project. The changes in estimated costs from those shown earlier include:

Lower Scriver Creek powerplant (3 units, 90,000 kilowatt total)	$18, 203, 000
Switchyards and transmission lines	7, 041, 000
General property	1, 800, 000
Total estimated construction cost	84, 887, 000
Interest during construction	5, 289, 000
Total Federal investment	90, 176, 000
Repayable Federal investment	89, 918, 000
Capital cost assigned to commercial power for repayment	94, 576, 000

The annual cost for interest and amortization in 50 years would be $3,334,700. The annual costs for operation, maintenance, and provision for replacements are estimated at $792,700, thus resulting in a total annual cost of $4,127,400.

Power production

The lower Scriver Creek pawerplant, with 90,000 kilowatts installed capacity, would meet daily peaking requirements through use of Scriver Creek Reservoir pondage. With a net head of 794 feet under average conditions at 85 percent operating efficiency, the plant would have an annual output of 406 million kilowatt-hours. The upper and lower Scriver Creek powerplants would have a combined output of 620 million kilowatt-hours annually. The reduction in average head at the lower Scriver Creek plant reduces the output of that plant by about 15 million kilowatt-hours annually.

Storage control above and below the power sites and extra capacity in the diversion tunnels above that required for uniform release of the average annual flow would permit great flexibility in production of firm energy in coordination with powerplants of the Boise project and those elsewhere in the area to meet market requirements.

With construction of Garden Valley Reservoir and powerplant there would be available for power production an average of 1,520,000 acre-feet of water annually at an average head of 334 feet. Assuming an average operating efficiency of about 80 percent, the potential output would be 416 million kilowatt-hours annually from the 60,000-kilowatt Garden Valley powerplant. The total energy from all 3 plants would be 1,036 million kilowatt-hours annually; of this amount 975 million kilowatt-hours would be firm and 61 million kilowatt-hours would be secondary energy.

Power value

Inclusion of Garden Valley Dam, Reservoir, and powerplant and the increase in initial capacity of lower Scriver Creek powerplant would provide a dependable capacity of 187,500 kilowatts, and under criteria of $18.62 per kilowatt of dependable capacity plus 3.96 mills per kilowatt-hour of firm energy and 3.9 mills per kilowatt-hour for secondary energy, as used earlier, would provide an average annual value of power from all facilities of $7,590,000.

Using the sale value of power, as previously estimated, the salable energy produced by the plants would result in average annual revenues of $4,353,000.

Economic justification

Annual costs, as prsented previously, amount to $4,127,400, which includes transmission facilities to interconnect with the Idaho Power Co. lines at Eagle, Idaho. Since at-site values are used as the measure of benefits, annual at-site costs amounting to $4,023,900 without the interconnection transmission facilities are used for comparison. The tax component foregone by Federal development amounts to $5.25 per kilowatt of dependable capacity or $984,400 per year. The addition of the tax component to the at-site costs results in a total at-site cost of $5,008,300. Using the previously determined value of power, $7,590,000 as a

measure of the annual benefits and the at-site anual costs, including the tax component as a measure of the annual costs, the benefit-to-cost ratio is 1.52 to 1.

Financial feasibility

The annual sales value of the energy produced at the powerplants ($4,353,000) would be sufficient to pay annual operation and maintenance costs, provide for replacements as they are required and repay the capital costs of the development, including the deferred costs of Cascade Reservoir, with interest at 2.5 percent within 45 years.

CONCLUSIONS

(*a*) The Scriver Creek facilities are economically and financially feasible and present no unusual engineering problems nor construction difficulties.

(*b*) The capital costs assigned to power can be repaid with interest at 2.5 percent in 43 years through sale of power at rates now in prospect.

(*c*) The development of these facilities will provide net annual revenues amounting to $2,033,800 which can be used, after the original investment in these facilities has been repaid, to assist in the repayment of irrigation costs which may subsequently be incurred in the Central Snake River area.

(*d*) Construction of the Scriver Creek facilities will not interfere in any way with the present and anticipated future use of water from the Payette River.

(*e*) The facilities proposed can be incorporated in any plan for the diversion of Payette River water for use on the Mountain Home division lands, but the development of these facilities does not depend on such a diversion.

(*f*) These facilities will provide an assured and economical source of power for irrigation pumping from Snake River or from ground water in the Boise Valley for development of the Mountain Home division lands.

(*g*) The project could be enlarged by the inclusion of Garden Valley Dam, Reservoir, and powerplant and still pay out in 45 years, in which case net annual revenues of $3,560,300 would be available after repayment of the original investment to assist in the repayment of irrigation costs.

Mr. SAYLOR. Mr. Chairman, I would like to have the motion complied with now that it has been made.

Mr. ASPINALL. The gentleman has the right to ask these statements be placed upon the desk of the committee.

The Chair calls to the witness stand Mr. C. I. Hoisington, Chief of Estimates and Analyses Branch of the Bureau of Reclamation, Denver.

Dr. MILLER. A parliamentary inquiry?

Mr. ASPINALL. The gentleman will state it.

Dr. MILLER. Would it be in order to inquire whether these people are here at the request of the Interior Department or at their own request?

Mr. ASPINALL. The Chair will make this statement:

The Chair addressed, under date of July 1, 1955, a letter to Hon. Douglas McKay, Secretary of the Interior, Department of the Interior, Washington, D. C.

DEAR MR. SECRETARY: The Irrigation and Reclamation Subcommittee will hold hearings on H. R. 4719, to authorize construction of the Hells Canyon project, on July 11, 13, and 14. It would be appreciated if you would have the following Interior Department staff members available to testify factually on this bill: Mr. J. R. Riter, Mr. L. G. Puls, and Mr. C. I. Hoisington, from the staff of the Assistant Commissioner of Reclamation and Chief Engineer in Denver; Mr. Elwyn L. White, Bureau of Reclamation, Boise, Idaho; Mr. Lynn Crandall, joint employee of the Geological Survey and the State of Idaho, Idaho Falls; and Mr. Earl Ostrander, Bonneville Power Administration.

Dr. MILLER. I think that answers it, Mr. Chairman, unless they are going to make some recommendations. If they are, I would like to know.

Mr. ASPINALL. The Chair understands the witnesses are present because of the request made by the chairman of the subcommittee and

are here by the authority granted by the Secretary of the Interior at the request of the chairman.

Mr. Hoisington, if you will proceed.

Mr. SAYLOR. Mr. Chairman, I would like to wait until I find out then where these statements are. So far I do not think we have received them all.

I object to proceeding further, Mr. Chairman, because the motion which was made by the gentleman from Oklahoma said that we should have placed upon our desks before we proceed the statement of all the witnesses, and they have not been presented. That is a motion which was carried by this committee.

Mr. ASPINALL. The Chair suggests it was not the motion carried by the committee.

Mr. SAYLOR. I will ask then that the reporter read the motion.

Mr. ASPINALL. All right, the reporter will read the motion.

(The motion was read by the reporter as recorded above.)

Mr. ASPINALL. That was the motion.

Mr. SAYLOR. The other five witnesses. I say to the Chair the statements of the other five witnesses have not been presented. We have four of them.

Mr. ASPINALL. Mr. Saylor, you will be entitled to the statements as the witnesses appear. However, the Chair was trying to comply with the wishes of the committee that they be placed on the committee desks at this time.

Mr. SAYLOR. Mr. Chairman, the committee just took action. Is it the position of the Chair that the committee having taken action the Chair can proceed to overrule it? The motion just read is that the 5 statements of the 5 remaining witnesses shall be placed upon the desks of the members.

Mr. ASPINALL. Mr. Saylor, that was not the motion. The motion was that the statements be filed and put in the record.

The Chair overrules the objection.

Proceed with your statement, Mr. Hoisington.

STATEMENT OF C. I. HOISINGTON, CHIEF, ESTIMATES AND ANALYSES BRANCH, DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION, COMMISSIONER'S OFFICE, DENVER, COLO.

Mr. HOISINGTON. My name is C. I. Hoisington.

Before I read my brief statement, I would like to call your attention to page 2 of the statement, line 4, which reads "January 1953 prices." That should be January 1952 prices, which would then make it in accord with the attached tabulation.

Mr. SAYLOR. Mr. Chairman, I do not know who the gentleman is on your left, but I object to him being up here.

Mr. ASPINALL. The gentleman cannot object to my staff member being here.

Proceed, Mr. Hoisington.

Mr. HOISINGTON. I am Chief of the Estimates and Analyses Branch, Construction Division in the Commissioner's Office, Denver, Colo.

In this capacity, I am responsible for the preparation, review and approval of construction cost estimates for the various features of Bureau projects such as dams, powerplants, pumping plants, transmission systems, canals, conduits, and all other classes of property,

including costs of materials, equipment, and installation labor. I am also responsible for preparing, issuing, and maintaining cost indexes for construction work and for reviewing of project planning reports with emphasis on costs and engineering economy and checking them against omission of features and essential work.

In agreement with the above duties and responsibilities, the estimates for construction of Hells Canyon Dam, powerplant, and appurtenant features, except for land and land rights, roads, trails, and bridges, communication, and recreational facilities were prepared under my direction. Land and land rights, roads, trails, and bridges, communication, and recreational facilities were prepared under the direction of the regional director.

The attached tabulation shows the estimated cost by accounts including a contingency reserve and investigations, engineering, and general expense for Hells Canyon project on three separate bases: January 1952 prices, total $356,810,000; the same estimate indexed to April 1955 prices, total $353,740,000; and the third category based upon April 1955 prices, incorporating a reduction due to the experience gained in the construction of Hungry Horse and including the elimination of some excess included in the previous estimates which was testified to in the Federal Power Commission hearings in January 1954, total $308,472,000.

Mr. Chairman, that completes my statement.

Mr. ASPINALL. Thank you, Mr. Hoisington.

The next witness is Mr. J. R. Riter, chief development engineer in the Commissioner's office at Denver.

STATEMENT OF JOHN R. RITER, CHIEF DEVELOPMENT ENGINEER, COMMISSIONER'S OFFICE, DENVER, COLO., BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR

Mr. RITER. Mr. Chairman and members of the committee, my name is John R. Riter. I am employed by the Bureau of Reclamation as chief development engineer in the Commissioner's office at Denver.

I have a prepared statement of about 20 pages pertaining to the estimates of power production and costs of generation for the Hells Canyon development on Snake River.

In accordance with the committee's request, my statement is filed for the record, and I request that I be permitted to supplement my prepared statement with a brief oral summary.

Mr. ASPINALL. Proceed.

Mr. RITER. The proposed dam would create a reservoir of 4,400,000 acre-feet total capacity, a maximum power head of 602 feet, and would have an ultimate powerplant capacity of 900,000 kilowatts.

The flows of Snake River near the dam site have been measured since 1910. The historic discharges have been influenced by upstream irrigation uses and the operation of reservoirs on the Snake River and its tributaries.

The present irrigated area in the Snake River Basin above the Hells Canyon Dam site is 2,600,000 acres. Now that 2,600,000 acres represents the irrigated area in the year 1948.

The active storage capacity of existing reservoirs, including the Palisades Reservoir, which is now under construction, is about 9 million acre-feet. In addition, there is a vast amount of underground

storage beneath the Snake River plains in southern Idaho which has regulating effect on streamflows.

Undeveloped irrigation potentials in the Snake River Basin are in excess of 1,300,000 acres.

Mr. BUDGE. Mr. Chairman, I want to interrupt there. I am not going to attempt to ask a question, but this is exactly the reason that I opposed the motion. Here he is using 1948 figures, and we cannot even ask him to bring them up to date. It is a ridiculous proceeding.

Mr. ASPINALL. You may proceed, Mr. Riter.

Mr. RITER. The estimates of power production are based on the residual streamflows at the Hells Canyon site after allowance for the depletion effects of present and progressively increasing future upstream irrigation developments.

Operating plans for the Hells Canyon Reservoir contemplate that this reservoir would be coordinated with the operation of existing and future power developments within the Columbia River Basin. The Columbia River is characterized by high flows during the spring flood months of May, June, and July, followed by decreasing flows, which usually reach a minimum in the wintertime.

With these runoff characteristics of the Columbia River, storage releases would be made from the Hells Canyon Reservoir during the season of low runoffs in the Columbia River system. The reservoir would provide about 2,350,000 acre-feet of annual regulation, plus slightly over 1,500,000 acre-feet of holdover storage capacity for release during years of extremely low runoff in the Columbia River system.

With operation in the manner indicated, Hells Canyon would increase the system prime power output by an average of 900,000 kilowatts during the 50-year amortization period.

The latest cost estimate for the Hells Canyon dam, reservoir, and 800,000-kilowatt powerplant is about $308,500,000.

Mr. BUDGE. Mr. Chairman, I ask that the witness go a little slower. I am trying to get these figures and it is impossible to keep up.

Mr. ASPINALL. The witness will cooperate.

Mr. BUDGE. Back up a little bit.

Mr. RITER. Which figure did you miss, sir?

Mr. BUDGE. I got the 900,000-kilowatt addition to the system. Now I would like to get the ones beyond that.

Mr. RITER. The latest cost estimates for the Hells Canyon dam, reservoir, and 800,000-kilowatt powerplant capacity is about $308,500,000.

Mr. BUDGE. Read that again, because the last witness said we had an installed capacity of 900,000 kilowatts and yours is 800,000. Is that right?

Mr. RITER. Mr. Congressman——

Mr. ASPINALL. Mr. Riter, you will proceed. We are not questioning, and the gentleman from Idaho will have to bring that up on cross-examination.

Mr. BUDGE. Give me the cost figure again then, if you will, the last figure.

Mr. RITER. $308,500,000.

With allowances for interest and amortization in a 50-year period, with interest at 2½ percent, operation and maintenance, and for the annual costs of power units, that is, additional power units at other sites in the system, to provide adequate load factor for the increased

primary power generation, the annual generation costs for the Hells Canyon development are estimated to be about $15,600,000. This is equivalent to an average of 2 mills per kilowatt-hour. With allowances for transmission, the annual costs of power delivered to load centers is about 3.56 mills per kilowatt-hour.

I have also made an analysis on an alternative method.

Mr. BUDGE. I was going to ask you to read that last sentence again, the one as to the 3.56. What was it you said there?

Mr. RITER. With allowances for transmission, the annual costs of power delivered to load centers is about 3.56 mills per kilowatt-hour.

Mr. BUDGE. Thank you.

Mr. RITER. I also have made an analysis by an alternative method, that is, alternative to the prime power method, which evaluates the salable energy and the dependable capacity at Hells Canyon site.

By this alternative method of analysis the operation of Hells Canyon Reservoir would be modified somewhat from the plans previously described.

In the alternative method of analysis the drawdown has been restricted to the top 2,600,000 acre-feet of storage capacity, which would avoid impairment of the powerplant capacity at the site.

With this alternative method of analysis, I find that we will need the installation of the entire 900,000 kilowatts, and the latest estimates of construction costs for the dam, reservoir and powerplant is about $315 million.

Mr. SAYLOR. Mr. Chairman, will the witness specify where in his testimony this alternative estimate to which he is now testifying is found?

Mr. RITER. That is on pages 19 and 20.

Mr. ASPINALL. You will continue, Mr. Riter.

Mr. RITER. The annual generation costs by this alternative method of analysis are estimated to be about $13,100,000, which is equivalent to about 2.25 mills per kilowatt-hour at the powerplant. With allowances for transmission costs, the annual costs of power delivered to load centers would be about 3.6 mills per kilowatt-hour.

That concludes my summary, Mr. Chairman.

Mr. ASPINALL. Thank you very much.

The Chair calls to the witness stand, Earl D. Ostrander, Director of Administrative Management, Bonneville Power Administration.

STATEMENT OF EARL D. OSTRANDER, DIRECTOR OF ADMINISTRATIVE MANAGEMENT, BONNEVILLE POWER ADMINISTRATION, PORTLAND, OREG.

Mr. OSTRANDER. Mr. Chairman and members of the committee, my name is Earl D. Ostrander. I reside in Portland, Oreg., where I am employed by the Bonneville Power Administration as Director of Administrative Management.

I have prepared a written statement which contains 7 pages of text and 5 attached tabulations. The written statement has been submitted.

The written statement refers briefly to the fact that I prepared and presented similar material to the Senate subcommittee in May on S. 1333. At that time the Bureau of Reclamation testified to a revised lower cost estimate for the high Hells Canyon project.

At the request of the Senate committee I submitted, after appearing, a supplemental statement incorporating the new cost estimate for the high Hells Canyon project. The supplemental statement appears in the hearings on the Senate bill at pages 484 to 489.

In the tables attached to my statement today I have precisely the same figures as were in the supplemental statement submitted to the Senate committee.

My written statement points out that at the present time in the Pacific Northwest the Federal power system, for which the Bonneville Power Administration is the marketing agent, consists of 12 dams with their powerplants, these 12 dams being either in existence or under construction. The status of each is noted briefly in the statement.

Summary data on the overall costs of system, including transmission, are also given. That appears at the bottom of page 2 and on the top of page 3.

It is noted next that these 12 hydroelectric generating plants together with the Bonneville Power Administration's high voltage transmission network are operated as an integrated system in the interest of maximum production from the system as a whole rather than for the benefit of any one unit in the system.

In the case of Hungry Horse project, for example, an important headwater storage project, the water is stored from the spring flood flows in the early spring and early summer, at which time production of power is reduced to a rather nominal level. Then in the wintertime when natural flows are low the storage is released in order to obtain greater production both at the site of Hungry Horse project and at the downstream projects through which the storage releases flow.

The high Hells Canyon project would be a somewhat similar operation, in that power production would be low in the spring and summer when flood flows are being stored and high in the wintertime when the downstream projects need increased flow.

In like fashion, we proceed with financial analyses on an integrated system basis.

My analyses have been given on this project once before, about 3 years ago, before this committee, last May before the Senate committee, and last year before the Federal Power Commission, and have been an attempt to show the impact upon overall system costs per kilowatt or per kilowatt-hour if the high Hells Canyon project were added as another plant in the Federal power system in the Pacific Northwest.

We simply proceed with the fact that we now have a system, or at any stage of development we have a system which does or will produce a given amount of power at a given total cost. If that system is changed by the addition of an important new project, we then have a new system, a new capacity, and a new cost. The impact or effect of adding the new project can then be ascertained as the difference in the system before and after adding the new project.

In this particular case, three analyses on this plan have been prepared.

One assumes the addition of the Hells Canyon project to the present system of 12 projects. For convenience we refer to the present system of 12 projects as the base system.

The second analysis considers the addition of Hells Canyon as the last added project in the so-called phase C–2 stage of development, which involves 30-some projects as against the 12 projects in the base system.

In this second case, the Libby project, which is one of the projects in the phase C–2 system, is the so-called low Libby project, with about four and a quarter million acre-feet of storage. That project would still leave this system on the basis of the single critical year 1936–37 as the controlling year for determining system prime power capability.

In the third analysis, which is labeled "case C," the high Hells Canyon project is considered as the last added to the phase C–2 stage of development, but with the high Libby project, which changes the system from a single critical year to a period, I believe, of about 20 months.

The results of the analyses in the three cases are given in tables A, B, and C.

In table D—let me say first that in those three tables the data are presented in terms of cost per kilowatt. In table D the cost data have been presented in terms of cost per kilowatt-hour, that is, mills per kilowatt-hour delivered to customers load centers. Data are shown separately for generation and transmission in each of the three cases analyzed and in each case both with and without the high Hells Canyon project.

The final table, table E, presents an estimate of the capital investment that would be required by the addition of Hells Canyon to the Federal power system. This total estimate includes the Hells Canyon project itself, the cost for additional generator units that would be required at downstream or other projects in this system, and the cost for the transmission system required on account of addition of Hells Canyon.

The transmission cost data include the costs to integrate Hells Canyon into the Federal power system as well as the costs to deliver power to customers' loads.

The cost analysis shows in brief, and I will be glad to go into any detail you may wish—but, in brief, in all three cases analyzed the average costs of the system with Hells Canyon do not differ greatly from the average costs of the system without Hells Canyon. Accordingly, in my opinion, the addition of Hells Canyon as another unit in the Federal power system at these stages of development analyzed would not adversely affect our rate levels.

In terms of mills per kilowatt-hour delivered to the customers, as shown in table D, if Hells Canyon were added now as the next plant in the system, average generation costs with Hells Canyon would be about 1¾ mills per kilowatt hour and transmission costs 1 mill, making a total delivered cost after allowance for losses of 2¾ mills.

For the larger systems, that is, the phase C–2 stage of development, the generation costs are somewhat higher, running slightly more than 2 mills per kilowatt-hour; specifically about 2.07 mills in one case and 2.04 mills in another.

Transmission costs are also slightly higher at this stage of development, averaging 1.07 mills in one case and 1.06 in the other.

67129—56——5

So the total costs run a little more than 3 mills at the more advanced stage of development, which would include more higher-cost projects.

The total capital investment required, if the Hells Canyon project were the next added project to the base system of 12 projects, is about $503 million. That is capital investment, which is construction cost, plus an allowance for interest during construction. Of that $503 million in my analysis, $49 million has been allocated to nonpower purposes, the remainder to power. The total includes $129.5 million for transmission.

At the larger stage of development, the capital investment increases somewhat to five hundred and forty-odd million dollars. The precise figures are given in table E.

The reason for the increase is that there would be additional power to deliver to load centers, thus requiring a somewhat higher transmission investment, plus additional investment for more generator units at downstream plants.

That completes my statement, Mr. Chairman.

Mr. ASPINALL. Thank you, Mr. Ostrander.

The next witness is Mr. Elwyn L. White, area engineer, from Boise, Idaho. Mr. White's statement, I believe, is entitled "Scriver Creek Power Facilities, Payette Unit, Mountain Home Division, Snake River Project, Idaho."

Is that correct?

Mr. WHITE. That is right, sir.

Mr. ASPINALL. You may proceed.

STATEMENT OF ELWYN L. WHITE, AREA ENGINEER, BOISE, IDAHO, BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR

Mr. WHITE. Mr. Chairman and members of the committee, my name is Elwyn L. White, and I am from Boise, Idaho. I am area engineer in charge of the Snake River Development Office of the Bureau of Reclamation at Boise.

I have this short report entitled "Scriver Creek Power Facilities, Payette Unit, Mountain Home Division, Snake River Project, Idaho," which was prepared recently after it was learned that I had been asked to testify before the Senate committee on Senate bill 1333.

This report, of course, has not been reviewed by higher officers, but it is largely based on reports that have been reviewed earlier.

The report describes the Scriver Creek power facilities in some detail and gives the costs on current price levels.

This report has been submitted for the record, and I can brief it at this time if you wish.

Mr. ASPINALL. Yes.

Mr. WHITE. The Scriver Creek power facilities include the upper Scriver Creek powerplant with an installed generating capacity of 37,500 kilowatts, and the lower Scriver Creek powerplant with an initial installed generating capacity of 60,000 kilowatts, with provision for future installation of 2 additional generating units of 30,000-kilowatt capacity each.

Also included are the incidental facilities, among which are the existing Cascade Reservoir, Smiths Ferry diversion dam and reservoir, Smiths Ferry-Scriver Creek tunnel, Scriver Creek Dam and Reservoir, Scriver Creek-Garden Valley tunnel, and the necessary

switchyards and transmission lines to deliver the power generated by the project powerplants to the Idaho Power Co.'s 138-kilovolt lines in the vicinity of Eagle, Idaho.

Extension of the facilities to include the Garden Valley Dam, Reservoir, and powerplant, with a 60,000-kilowatt capacity, would allow for the immediate installation of an additional 30,000 kilowatt generating unit at the lower Scriver Creek powerplant.

Dr. MILLER. Mr. Chairman, I want to raise a parliamentary question. I think this morning when we started the discussion we had 70 minutes to be divided equally between the proponents and opponents. I wanted to inquire how the time goes, whether it is time now for the questioning of the witnesses.

Mr. ASPINALL. May I advise my former chairman we had 86 minutes; it took 16 minutes for committee discussion. That left 70 minutes.

According to the memory of the Chair, the motion of the lady from Idaho was that half the time would be given to the presentation and half given to the questioning this moring. If that is correct, then we are ready for questioning at this time.

Dr. MILLER. How much time has been used for presentation?

Mr. ASPINALL. About 43 minutes.

Mrs. PFOST. Mr. Chairman, I ask, in view of the delay, the dilatory procedure, will that be taken out of the proponents' time?

Mr. ASPINALL. No. The Chair would suggest that so far, in his opinion, there has been no dilatory procedure as such. It has been a question of discussion. It will not be taken from the time. So when we are dividing it up, the time will be divided accordingly.

Mr. ROGERS. Will the gentlewoman yield?

Mrs. PFOST. Yes.

Mr. ROGERS. Mr. Chairman, may I move that notwithstanding any other action of the committee the witnesses be allowed to finish their statements.

Mr. ASPINALL. You can ask unanimous consent.

Mr. ROGERS. I ask unanimous consent.

Mr. SAYLOR. I object.

Mr. BUDGE. Mr. Chairman, reserving the right to object——

Mr. ASPINALL. Objection has been made. It is time for the questioning.

Does the gentleman from Nebraska have questions at this point this morning?

Dr. MILLER. I would like to question the witnesses if we are not meeting this afternoon. We have their statements here. I only have 3 or 4 short questions I would like to ask them. I believe they are very fine statements.

Mr. ASPINALL. They will be here tomorrow morning.

Mrs. PFOST. Mr. Chairman, in view of the short time, I would request that the committee divide the time between the members that are present. I move that the remainder of this morning's time be divided among the committee members present for asking questions of the witnesses and that the six witnesses be brought forward to the witness stand.

Mr. ASPINALL. You have heard the request.

Mr. SAYLOR. I object.

Mrs. GREEN. I second the motion.

Mr. BUDGE. Mr. Chairman?

Mr. ASPINALL. Mr. Budge.

Mr. BUDGE. I desire to be heard on the motion before the Chair puts it.

Mr. ASPINALL. The gentleman has that right.

Mr. BUDGE. I want to reiterate that according to the Department's report—and, incidentally, this committee has never received a report from the Department, and I tried to get legislation before the committee for some 3 or 4 months and was told by the chairman that it could not be brought because I did not have a report from the Department—according to the report which they furnished the other body, we have an expenditure called for in this bill of about $1,360,000,000, and we are not being given the opportunity to cross-examine these witnesses. For that reason, I hope that this amendment will not pass. You cannot cross-examine Mr. White. He has not given any testimony. We have 1 or 2 other witnesses listed who have not testified. I do not know how you can cross-examine the witnesses before the testimony is in the record.

Mr. WESTLAND. Will the gentleman yield?

Mr. BUDGE. I yield to the gentleman from Washington.

Mr. WESTLAND. Does this represent the entire testimony of the proponents in this project?

Mr. BUDGE. It does as to all of the technical witnesses upon which the expenditure of $1,360,000,000 of Federal funds is based.

Mr. WESTLAND. In other words, in 43 minutes of testimony we are supposed to be able to decide whether or not this is a good project?

Mr. BUDGE. That is right.

Mr. WESTLAND. And with less than 43 minutes of cross-examination.

Mrs. PFOST. Will the gentleman yield?

Mr. BUDGE. I yield.

Mrs. PFOST. I certainly recognize the fact that the time is all too short, but we had 4 days this week set aside for Hells Canyon hearings. We have people from the grassroots in Idaho coming to testify for the high Hells Canyon Dam on Wednesday. In view of the 1 day for grassroots testimony and 1 day for technical witnesses, unless the committee can see some additional time to set aside for these hearings, I do not see where the time is coming from.

Mr. BUDGE. I would reply to the lady that she should not have made the motion which forecloses the cross-examination of these witnesses. That is the most important part of the committee procedure in order that the members of the committee may find out what this project is about, and the lady's motion absolutely foreclosed the members of this committee, most of whom have never heard anything about this testimony. It absolutely foreclosed us from conducting a proper cross-examination.

Mrs. PFOST. Mr. Chairman, will the gentleman yield?

Mr. BUDGE. I yield.

Mrs. PFOST. I would say that if we could proceed to cross-examine these technical witnesses this morning and if some additional time were found at the latter part of the week, I would be very happy to have these witnesses called back for further cross-examination.

Mr. BUDGE. I thank the lady for that contribution. I think it should be obvious to the members of the committee that 2 hours devoted to the technical aspects of a $1,360,000,000 project is on its face

somewhat ridiculous. So I hope there will be some more time found if there is any intention to vote on this bill.

Mr. SISK. Will the gentleman yield?

Mr. BUDGE. I yield.

Mr. SISK. Would the gentleman object if later in the week we had afternon sessions?

Dr. MILLER. I would.

Mr. WESTLAND. I would.

Mr BUDGE. I would not.

Mr. WESTLAND. We have some very important legislation before the House.

Mr. SISK. I just wanted to comment there had been some indication of objections to afternoon sessions. That does not seem to me completely consistent that if you want to give the witnesses the time to testify we would then in turn object to afternoon hearings.

Mr. BUDGE. Of course, the members who made those comments also stated before they made the comments that this week was going to be an extremely heavy week in the House. If the gentleman has read his whip notice, he will note we will probably have more major legislation on the floor this week than any week prior hereto.

Mr. EDMONDSON. Will the gentleman yield?

Mr. BUDGE. Yes.

Mr. EDMONDSON. I wonder if the gentleman would object or members would object to having these expert witnesses back in at an hour in advance of our grassroots testimony on Wednesday, have it at an earlier hour.

Mrs. PFOST. If you could start the hearings earlier——

Mr. ASPINALL. Let us proceed in order. The time of the gentleman has expired.

Mrs. PFOST. Mr. Chairman?

Mr. SAYLOR. May I be heard?

Mr. ASPINALL. The Chair recognizes the gentlewoman from Idaho.

Mrs. PFOST. Mr. Chairman, I would yield to the gentleman from Oklahoma.

Mr. EDMONDSON. Mr. Chairman, for one thing, we now have the testimony of all these witnesses in the record. The statements are available and will be available for study by the members of the committee between now and Wednesday. It seems to me we could all cross-examine them to better purpose and with a better knowledge of what their testimony was with the opportunity to study these statements between now and Wednesday.

Mr. BUDGE. Will the gentleman yield to me?

Mr. EDMONDSON. I would like to suggest that we either meet at an earlier hour on Wednesday or else confine the grassroots testimony to a portion of the period on Wednesday and bring these expert witnesses back on Wednesday morning. If we cannot bring them in at 9:30 and start at 9:30 with them, let us have them again at 10 and permit cross examination of these expert witnesses for a period on Wednesday morning in advance of our grassroots testimony.

That is a suggestion which I would like to make to the Chair if everyone is amenable to it.

Mrs. PFOST. Mr. Chairman, I would suggest that the committee meet at an earlier hour than usual each morning this week, if they

can do so, so we may get more testimony from both the proponents and opponents of the high dam.

Dr. MILLER. Will the gentleman yield?

Mr. EDMONDSON. Yes.

Dr. MILLER. When I raised the question about the time, I understood Mrs. Green, the lady from Oregon, wanted to divide the time equally this morning. I would suggest we have all 5 or 6 witnesses up here and ask questions. I think we ought to question them. I think that is a good procedure to follow.

Mrs. PFOST. Mr. Chairman, I could withdraw my motion in view of some other action by the committee that we would have additional time this week to hear these witnesses.

Mr. ROGERS. Will the gentlewoman yield?

Mrs. PFOST. I yield.

Mr. ROGERS. I do not think you ought to withdraw your motion. I think it is very obvious that dilatory tactics are being used to prevent this matter from being heard by this committee. I have sat here and have not taken any part in it. I do not know anything about Hells Canyon project at the present time except what I heard before.

We have wasted the entire morning, because there was a bunch of parliamentary tricks here and have not heard these witnesses. We should have heard these witnesses, and it is not fair to the members of this committee, whether they have seniority or whether they do not have seniority, for one or two people to hog all the time and use it for cross-examination. I think the motion of the gentlewoman from Idaho is very fair.

I think everybody ought to have a chance to cross-examine these witnesses. If you are in earnest about wanting to get to the facts of this thing, we can have night sessions. Now let us see where the committee members stand on this thing. You do not want to meet this afternoon, you do not want to meet early in the morning, so let us meet at night.

If this is as important as it has been represented, involving over a billion dollars, I think this committee ought to hear and the people of the United States are entitled to know what is in it. They are entitled to know both sides of the question, and that is what I want to know.

Mr. BUDGE. Will the gentleman yield to me?

Mr. ROGERS. I do not have the floor.

Mrs. PFOST. I will yield to the gentleman from Idaho.

Mr. BUDGE. Reserving the right to object, I would say to the gentleman from Texas I have not attempted to engage in any dilatory tactics. The only thing I want is an opportunity to cross-examine these witnesses. This thing is extremely important to my State, and I think in all fairness the gentleman would not want me foreclosed from cross-examination.

Mr. ROGERS. I would not want the gentleman from Idaho foreclosed from cross-examination, and I would not want anyone else foreclosed from cross-examination, which is what is going to happen if you do not divide this time and make people abide by rules and regulations.

That is all the interest I have in it. I think it is just as important that the man who has the least seniority on the committee have the same opportunity to cross-examine on the direct examination of the witnesses as the Speaker of the House or the chairman of the committee.

Mrs. GREEN. Will the gentleman yield?

Mr. ROGERS. I do not have the time.

Mr. ASPINALL. The gentlewoman from Idaho has the time. One minute.

Mrs. PFOST. I yield to Mrs. Green.

Mrs. GREEN. I ask the lady to yield in order to move the previous question.

Mrs. PFOST. I yield for that purpose.

Mrs. GREEN. I move the previous question.

Mr. ASPINALL. The previous question has been moved. All those in favor of the previous question signify by saying "Aye."

Those opposed say "No."

The ayes appear to have it.

Mr. DAWSON. Will you state the motion?

Mr. ASPINALL. The motion is that the remaining time this morning be divided between the committee members for cross-examination of the five witnesses who have appeared before the committee.

The ayes have it. The motion is carried, and it is so ordered.

Mr. WESTLAND. The question was on the previous question.

Mr. ASPINALL. The Chair stands corrected. That is right.

Those in favor of the motion signify by saying "Aye."

Those opposed say "No."

The motion is carried, and it is so ordered.

Mr. Puls, Mr. Hoisington, Mr. Riter, Mr. Ostrander, Mr. White, will you take your places before the witness table?

Is there any objection to Mr. Crandall also? His statement is in the record.

Mr. DAWSON. A parliamentary inquiry, Mr. Chairman.

Mr. ASPINALL. The gentleman will state it.

Mr. DAWSON. Is it my understanding that all of the members of the committee are going to have an opportunity to question and the time is going to be divided, or does it go to those with seniority?

Mr. ASPINALL. We will have a minute and three-quarters if we get started. The Chair would request that those who do not wish to use any time give it to people who will ask for more time.

The Chair recognizes the gentleman from Texas, Mr. Rogers.

Mr. ROGERS. I yield to the gentlewoman from Idaho, Mrs. Pfost.

QUESTION PERIOD OF L. G. PULS, C. I. HOISINGTON, J. R. RITER, LYNN CRANDALL, ELWYN L. WHITE, AND EARL D. OSTRANDER

Mrs. PFOST. Mr. Riter, do you see any likelihood that additional upstream irrigation in the Snake River will interfere with the filling of the Hells Canyon Dam?

Mr. RITER. No, ma'am, because my study of power production is based only on the water that would be flowing at Hells Canyon site after allowing for upstream irrigation. There is no conflict.

Mrs. PFOST. Thank you. Has there been a great deal of added irrigation on the upper Snake River in the last 40 to 42 years?

Mr. RITER. Yes.

Mrs. PFOST. Has this increased irrigation greatly depleted the flow of the Snake River at the Hells Canyon site?

Mr. RITER. There has been some depletion. The area irrigated in 1910 was 1,400,000 acres and by 1948 it had increased to 2,610,000

acres. We estimate that the depletion rate is approximately 2 acre-feet per acre. So there has been some depletion.

Mrs. PFOST. But small?

Mr. RITER. Relatively small compared to the streamflows. Average streamflow at Hells Canyon site at the 1948 level was 11,524,000 acre-feet. So relatively small.

Mrs. PFOST. In view of the relatively small depletion due to past increased upstream irrigation, do you think future irrigation in the upper Snake River would greatly deplete the flow of the river at Hells Canyon?

Mr. RITER. Table 3, I have an estimate for the 20-year period 1928 to 1948 which shows that.

Mr. ASPINALL. The time of the gentlewoman has expired.

The Chair recognizes the gentleman from Nebraska, Dr. Miller.

Dr. MILLER. Mr. Chairman, the people appearing here—Mr. Puls, Mr. Riter, Mr. White, and 2 or 3 others—have made some good objective statements. I wanted to ask Mr. Puls, are you in favor of Hells Canyon project?

Mr. PULS. Is that a personal question, sir?

Dr. MILLER. Have you made any statement, publicly or privately, that you are for Hells Canyon project?

Mr. PULS. I made a statement that the site is an excellent site for this dam.

Dr. MILLER. You are for it then.

Mr. Riter, have you made any statement, publicly or privately, that you are for the project?

Mr. RITER. I presented factual information before the Federal Power Commission which presented the facts. I have concluded that the Hells Canyon Dam site is a feasible undertaking.

Dr. MILLER. Are you for it or against the Hells Canyon site?

Mr. RITER. Of course, I am not speaking for the Department of the Interior, I am here purely in the role of presenting factual information.

Dr. MILLER. Do you know what the position of the Department of the Interior might be at this time?

Mr. RITER. Only as it has been read by the chairman.

Dr. MILLER. Beg pardon?

Mr. RITER. Only as it has been read here by the chairman. Our only instructions were to appear and present factual information.

Dr. MILLER. You are here under that instruction. I understand that.

Mr. RITER. Yes, sir.

Dr. MILLER. I wondered if you had made any statement, publicly or privately for or against a high Hells Canyon Dam?

Mr. RITER. The only statement I made was before the Federal Power Commission where I said the Hells Canyon development is a feasible development.

Dr. MILLER. Mr. White, have you made any statement, publicly or privately, for or against Hells Canyon project?

Mr. WHITE. I am appearing, sir, before this committee on the Scriver Creek power facilities. I could not consider myself expert at all on Hells Canyon Dam. I have not worked on that project.

Dr. MILLER. Have you made any statement for or against Hells Canyon?

Mr. WHITE. I have made no public statement on it at all.

Dr. MILLER. I think that is all, Mr. Chairman.

Mr. ASPINALL. The Chair recognizes the gentlewoman from Idaho.

Mrs. PFOST. Mr. Chairman, I would like to direct this question to Mr. Crandall.

Would the Idaho Power Co. three dam——

Mr. BUDGE. I object. Mr. Crandall has not even testified. Obviously he cannot be cross-examined before he has testified. The motion was, as put by the Chair, the five witnesses who had testified and Mr. Crandall was not included. That was the Chair's motion.

Mr. ASPINALL. The gentleman is correct on the motion as far as that is concerned. The Chair asked if there were any objection to having Mr. Crandall take his place before the witness stand and there was no objection made at that time.

Mr. BUDGE. I did not hear any request that he be included in the motion which passed.

Mr. ASPINALL. I think the gentleman has the right to object, although——

Mr. ROGERS. A point of order, Mr. Chairman. There was no objection made at the time. I think this committee is entitled to have this information.

I ask unanimous consent that this witness be allowed to include his statement. If we are going to stifle witnesses and shut them up, I would like to find it out right now.

Mr. ASPINALL. May the Chair suggest to the gentleman from Texas that Mr. Crandall's statement is a part of the record on the motion made by the gentleman from Oklahoma. As far as that is concerned, the chairman would think that the gentleman from Idaho would permit the questions in order to keep the record straight.

Mr. BUDGE. I will withdraw the objection, Mr. Chairman, but I think this is the most unusual procedure I have seen in my 5 years in the Congress.

Mr. ASPINALL. The Chair is taking no exceptions to anything the gentleman says. [Laughter.]

The gentlewoman will proceed.

Mrs. PFOST. Mr. Crandall, would the Idaho Power Co. three power dams call upon the river as much as the high Hells Canyon Dam would?

Mr. CRANDALL. That depends on how you used the water that was available in the river. The flow of the river is the same if you store—if you use 3,800,000 acre-feet, that would be a greater draft at times than the Idaho Power Co. But if you restricted your use of water to the alternate plan suggested by Mr. Riter of a maximum of 2,600,000 acre-feet, and in an ordinary year a little over 2 million, and in the later life of the project 1 million acre-foot storage, I do not think any trouble would arise over that use of the water supply.

It is a great option. The thing is opened to the operators of the project to make such use of the available supply as will produce the most power and fit in with the use of the rest of the Columbia River power system. They are not confined to any one kind of operation.

Mrs. PFOST. Mr. Crandall, you have been closely——

Mr. SAYLOR. Would you have him tell us that last statement? I did not quite hear it. I ask it not be taken out of your time. I think he made a very important point.

Mr. Crandall, would you repeat the last statement?

Mr. ASPINALL. The reporter will read it.

(The record was read by the reporter.)

Mr. ASPINALL. The time of the gentlewoman has expired.

The Chair recognizes the gentleman from South Dakota, Mr. Berry.

Mr. SAYLOR. Mr. Chairman, I asked that not be taken from the lady's time.

Mr. ASPINALL. The time was not taken out of her time.

Mr. BERRY. Mr. Chairman, I reserve my time and yield it to the gentleman from Idaho, Mr. Budge.

Mr. ASPINALL. The gentleman cannot reserve and yield both.

Mr. BERRY. I yield then, Mr. Chairman.

Dr. MILLER. Mr. Saylor is next.

Mr. ASPINALL. Pardon me. The gentleman from Pennsylvania is recognized at this time.

Mr. SAYLOR. Mr. Puls, the statement which you presented here has in it some sketches which show the maximum elevation of the dam to be 2,077 feet. Is that correct?

Mr. PULS. That is right, sir.

Mr. SAYLOR. The maximum elevation of the 14-foot penstock or the intake is 1,770 feet, or 300 below the elevation. Is that correct?

Mr. PULS. That is correct.

Mr. SAYLOR. And the elevation of the tailrace is 1,467 feet, or 303 feet lower; is that correct?

Mr. PULS. That is correct.

Mr. SAYLOR. Will there be any water whatsoever taken out of here for the production of power below 1,770 feet?

Mr. PULS. No, sir.

Mr. SAYLOR. Then the only use which this dam has for power is above 1,770 feet?

Mr. PULS. That is correct.

Mr. SAYLOR. Mr. Hoisington, how long have you been with the Department?

Mr. HOISINGTON. I have been with the Department approximately 21 years.

Mr. SAYLOR. And what has your job been while you have been there?

Mr. HOISINGTON. I started in with the Chief Engineer's Office in the design branch on electric facilities, dams, pumping plants, and various other features.

Mr. SAYLOR. How long have you been Chief of Estimates and Analyses Branch of the Bureau of Reclamation, Department of the Interior?

Mr. HOISINGTON. As I recall, I was designated Chief of the Estimates and Analyses Branch in 1948.

Mr. ASPINALL. The time of the gentleman from Pennsylvania has expired.

The Chair recognizes the gentleman from Florida, Mr. Haley.

Mr. HALEY. I yield to the gentlewoman from Idaho.

Mrs. PFOST. Mr. Crandall, will you state for the record how long you have been associated with water in Idaho, irrigation water in Idaho?

Mr. CRANDALL. Since 1910. Since 1930 I have been district engineer of the United States Geological Survey and Snake River water-

master. However, any statements that I make here are merely my personal opinions; they are not to be construed as representing the view of the Snake River water users in any way.

Mrs. PFOST. Mr. Crandall, as you know, there has been wide discussion in Idaho that the high Hells Canyon Dam will infringe upon upstream water rights. Do you believe there is enough water in the Snake River to fill the Hells Canyon Reservoir at any time without endangering any future water rights?

Mr. CRANDALL. I would say that in my opinion there will be adequate water supply for the satisfactory operation of the Hells Canyon project. I think that that plan of operation and how much storage you might use in a particular year may change during the years, depending on your load and streamflow, but the operations can be adjusted to it to give a satisfactory operation.

Mrs. PFOST. Can the high Hells Canyon Dam in anyway endanger the present or future upstream water rights in Idaho?

Mr. CRANDALL. That is a legal question. I would just think perhaps lawyers would discuss that better than an engineer, the legal aspects of it.

Mrs. PFOST. Do you think that the water rights upstream can be endangered?

Mr. CRANDALL. I do not think so personally, but this is my own opinion. Other people think otherwise.

Mrs. PFOST. I should direct this question to the first——

Mr. ASPINALL. The time of the gentleman from Florida has expired. The Chair recognizes the gentleman from South Dakota.

Mr. BERRY. I would just ask one question. Does anyone on this panel, who has spent anywhere from 10 to 20 years working on this, think that we can act wisely in a minute and a half?

I yield the balance of my time to the gentleman from Idaho.

Mr. BUDGE. Mr. Riter, what is the storage called for in the Hells Canyon Dam?

Mr. RITER. The total capacity is 4,400,000 acre-feet.

As I have testified, it contemplates that about 2,300,000 would be used for annual storage and a little over 1,500,000 would be used for long-time holdover storage to be released only in case of years of extremely low runoff in the Columbia River System.

Mr. BUDGE. It is not your position that there is enough water to refill the reservoir every year to its capacity, is it?

Mr. RITER. No, sir. My studies were not based on the assumption that the reservoir would completely fill and completely empty every year. No, sir.

Mr. BUDGE. As a matter of fact, later on during the payout period, the total active storage runs somewhere between a million and a million and a half, does it not?

Mr. RITER. If you get stream depletion, you would have to adjust your operations. In the testimony I submitted before the Federal Power Commission I anticipated that ultimately you would only draw down the top million acre-feet on a normal basis, and then in case you should get an extreme drought in the Columbia River you could drain the live storage capacity. The live storage capacity is 3,800,000 acre-feet.

Mr. BUDGE. How many years over a 50-year period would you anticipate then you would be using over a million acre-feet?

Mr. RITER. I did not project my studies for a 50-year period. I selected for detailed study a 9-year period, and that showed a complete emptying twice, once in a year like 1936–37 and then once in the series of 3 dry years such as 1928 to 1932.

Mr. BUDGE. With particular respect to any——

Mr. ASPINALL. The time of the gentleman from South Dakota has expired. The Chair recognizes the gentleman from North Carolina, Mr. Shuford.

Mr. SHUFORD. I yield my time to the gentlewoman from Idaho.

Mrs. PFOST. I direct this question to whoever has the figures—what percentage of the Columbia Basin total power potential does the Snake River contribute?

Is it approximately one-eighth?

Mr. RITER. I do not have the figures in front of me, but it would be somewhere in that magnitude.

Mr. PFOST. The total Columbia Basin?

Mr. RITER. Yes, ma'am.

Mrs. PFOST. Mr. Ostrander, will you please enumerate for the committee the benefits to Bonneville by the Hells Canyon Dam?

Mr. OSTRANDER. The Bonneville Power Administration as a power-marketing agent, of course, is primarily interested in power resources to meet the loads in the area. That load is growing very rapidly.

From our point of view the high Hells Canyon project would add significantly to the power supply by providing generation at site and by providing storage waters that could be used at the downstream projects to add additional power to the area.

Mrs. PFOST. You do consider that because of the population growth there definitely will be a power shortage in that area?

Mr. OSTRANDER. Our forecasts indicate that unless there are substantial new starts the region will be short of power in 1960.

Mr. ASPINALL. The time of the gentleman from North Carolina has expired.

The Chair recognizes the gentleman from Utah, Mr. Dawson.

Mr. DAWSON. I would like to take 10¾ seconds of my time to inform the committee that I am here to try and get some facts on this whole situation. That is what I am primarily interested in. I think that certainly these are the witnesses we need to spend some time with rather than the grassroots people.

I for one would like to see us get here earlier or later or do something so we can get these facts. I am not interested in any dilatory tactics either. I want to get down to business and learn what we can. I do not think we are going to do that by this sort of hit-and-miss procedure.

Mr. HALEY. Will the gentleman yield?

Mr. DAWSON. Yes.

Mr. HALEY. I would like to state to the gentleman from Utah that that expresses my sentiments exactly.

Mr. DAWSON. Thank you. I hope that is not taken out of my time.

I yield the balance of my time to the gentleman from Idaho.

Mr. BUDGE. Mr. Riter, I forget where we were.

Mr. RITER. I think we were discussing the use of storage at Hells Canyon.

Mr. BUDGE. Under your studies, what is the average annual generation ascribed to Hells Canyon?

Mr. RITER. You recall, Congressman Budge, I made two studies, one of them on prime power. On that basis Hells Canyon would add to the Columbia River system an average of 900,000 kilowatts of prime power.

Mr. BUDGE. Did you not also——

Mr. RITER. Then I made an alternative study on the basis of kilowatt-hours at site. As I recall that figure, it was 5 billion——

Mr. ASPINALL. The time of the gentleman from Utah has expired. The Chair recognizes the gentleman from Oklahoma, Mr. Edmondson.

Mr. EDMONDSON. Mr. Chairman, I would simply like to compliment these witnesses on what I think is a very fine job of summarizing the highlights of these statements, and yield the balance of my time to the gentleman from Pennsylvania, Mr. Saylor, for questions.

Mr. SAYLOR. On my time I was asking Mr. Hoisington a question and he was trying to answer it, as to how long he had been in his present capacity.

Mr. HOISINGTON. Since 1948 in my present capacity.

Mr. SAYLOR. What projects have been constructed by the Bureau since you have been down there that have been built within the cost estimates?

Mr. HOISINGTON. I recall Hungry Horse project has been constructed within the cost estimate.

Mr. SAYLOR. Name any others.

Mr. HOISINGTON. I am not too familiar with the progress of these projects under construction.

Mr. SAYLOR. Mr. Chairman, at this point I would ask unanimous consent to have placed in the record a letter which was prepared by Mr. McFarland to the Commissioner of Reclamation requesting information with regard to projects authorized, how they were authorized, the original cost estimate at the time, the actual cost of construction if completed, the cost to date, percentage complete, if not completed, and the answers which I have just received from the Department. I think they will make a very interesting analysis for the Department.

Mr. ROGERS. I object.

Mr. SAYLOR. In view of the fact that some of the witnesses have just indicated that you can now build a project for roughly $48,000 less than you could in 1953.

Mr. ASPINALL. Objection has been heard. The time of the gentleman——

Mr. SAYLOR. Who objected?

Mr. ROGERS. I will withdraw the objection.

Mr. ASPINALL. The time of the gentleman has expired.

Is there any objection to his request?

Mrs. PFOST. What is the date of the letter?

Mr. SAYLOR. The date of the letter to the Department was May 25, 1955, and the answer is dated July 8, 1955.

Mr. ASPINALL. Hearing no objection, it is so ordered.

(The documents referred to follow:)

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
HOUSE OF REPRESENTATIVES,
Washington, D. C., May 25, 1955.

Hon. WILBUR A. DEXHEIMER,
Commissioner of Reclamation, Bureau of Reclamation,
Department of the Interior, Washington, D. C.

DEAR MR. DEXHEIMER: Please furnish me the following information on Federal reclamation projects:

(*a*) For all the projects existing and under construction:
(1) Date of authorization and how authorized.
(2) Original cost estimate at time of authorization.
(3) Actual total cost if project is completed.
(4) Cost to date and percent complete, if project is not completed.
(5) Amount and basis of any writeoff and percentage of total cost written off.
(6) Date repayment was started.
(7) Amount repaid to date.
(8) Estimated ultimate repayment.
(9) Estimated date when repayment would be complete.

(*b*) Changes and additions to the repayment information, including all categories, furnished to the Senate Interior and Insular Affairs Committee in March 1949, during hearings on the Eden project, Wyoming, which information appears on pages 32 to 35 of the printed hearings.

I realize that some of this information is available in various printed documents and that some of it has been furnished to the Interior Committee from time to time; however, much of the information available is obsolete and it is desirable that it all be assembled together. As I will need this information within the next week or 10 days, your prompt reply will be appreciated.

Sincerely yours,

JOHN P. SAYLOR, M. C.

DEPARTMENT OF THE INTERIOR,
BUREAU OF RECLAMATION,
Washington, D. C., July 8, 1955.

Hon. JOHN P. SAYLOR,
House of Representatives, Washington, D. C.

MY DEAR MR. SAYLOR: Please refer to your letter of May 25, 1955, requesting information on Federal Reclamation projects and our reply of June 9, 1955.

The information which you requested in item (*a*) of your letter is presented in attached tables—

Table A–1. Authorization and construction costs of reclamation projects, replying to your items (*a*) (1) through (4).

Table A–2. Writeoffs of construction charges by act of Congress, replying to your item (*a*) (5).

Table A–3. Repayment of reclamation projects, replying to your items (*a*) (6) through (8).

The information which you requested in item (*b*) of your letter is presented in attached exhibits—

Exhibit I. Statement on pay-out period for selected reclamation projects, June 1, 1955.

Exhibit II. Pay-out period of reclamation projects where water service contracts are negotiated under section 9 (e) and 9 (c) (2) of Reclamation Project Act of 1939.

Exhibit III. Extension of repayment periods resulting from execution of contracts pursuant to section 7 of the Reclamation Project Act of 1939 or the Rehabilitation and Betterment Act of October 7, 1949.

Exhibit IV. Project planning reports involving proposed projects where the repayment period for return of construction costs allocated to be repaid by irrigation exceeds 40 years.

Exhibit V. Repayment contracts under authority of the Act of December 5, 1924.

Sincerely yours,

W. A. DEXHEIMER, *Commissioner.*

TABLE A–1.—*Authorization and construction costs of reclamation projects—Projects existing or under construction as of Dec. 31, 1954*

Project and State	(1) Authorization		(2)	(3)	(4) Cost to date	
	Date	Authority	Original cost estimate	Actual total completed cost	Dec. 31, 1954	Percent complete
1. Arnold, Oreg.[1]	July 25, 1947	Congress	$100,000	(2)		100.0
Additional funds	Dec. 23, 1947	do	72,000	(2)		
Do	Oct. 12, 1949	do	35,150	(2)		
2. Austin, W. C., Oklahoma.	June 28, 1938	do	2,497,000	$12,673,133		100.0
Altus Dam	Feb. 13, 1941	President	3,103,000			
3. Avondale, Idaho[1]	July 31, 1953	Congress	222,000		$205,420	74.2
Additional funds	July 1, 1954	do	53,000			
4. Baker, Oreg.	Mar. 18, 1931	President	200,000	281,589		100.0
5. Balmorhea, Tex.	Apr. 15, 1944	do	347,000	407,741		100.0
6. Belle Fourche, S. Dak.	May 10, 1904	Secretary	2,100,000	4,665,477		100.0
Rehabilitation and betterment.					393,904	55.6
7. Bitter Root, Mont.	July 3, 1930	Congress	750,000	953,051		100.0
Rehabilitation and betterment.					69,751	78.1
8. Boise, Idaho-Oreg.	Mar. 27, 1905	Secretary	11,000,000	$16,657,012		100.0
Deadwood Dam	Oct. 19, 1928	President	1,200,000			
Payette division	Dec. 19, 1935	do	5,000,000		17,037,597	99.8
Anderson Ranch	June 25, 1940	do	13,100,000		30,115,397	99.8
Black Canyon rehabilitation and betterment.					535,035	53.0
Arrowrock Dam[3]					[3] 228,086	98.3
9. Boulder Canyon, Ariz.-Calif.-Nev.:						
Hoover Dam and powerplant.	Dec. 21, 1928	Congress	126,500,000		166,705,971	96.3
All-American Canal system.	do	do	38,500,000		60,584,318	89.7
All-American flood works.	July 22, 1947	Secretary	8,213,200			
Boulder City					14,014	8.2
10. Buffalo Rapids, Mont.:						
First division	Sept. 27, 1937	President	1,605,000		2,302,894	89.5
Enlargement	May 15, 1940	do	230,000			
Second division	Oct. 11, 1939	do	1,450,000		2,259,098	87.8
Enlargement	May 15, 1940	do	390,000			
Completion (both divisions).	Oct. 10, 1950	Congress	1,372,000			
11. Buford-Trenton, N. Dak.	Sept. 23, 1939	President	1,500,000	942,607		100.0
Enlargement	Aug. 7, 1943	do	138,000			
12. Burnt River, Oreg.	Sept. 25, 1935	Secretary	500,000	601,026		100.0
13. Cachuma, Calif.	Mar. 4, 1948	do	32,310,000		40,637,381	92.7
14. Carlsbad, N. Mex.	Nov. 28, 1905	do	600,000	4,242,363		100.0
Alamogordo Dam.	Nov. 6, 1935	President	2,500,000			
Spillway enlargement.[1]	July 1, 1954	Congress	1,526,000		119,216	7.8
15. Central Valley, Calif.	Dec. 2, 1935	President	170,000,000			
Additional reauthorization.	Aug. 26, 1937	Congress	12,000,000			
American River division.	Oct. 14, 1949	do	54,742,000		435,405,525	58.0
Sacramento canals.	Sept. 26, 1950	do	42,000,000			
16. Colorado-Big Thompson, Colo.	Dec. 21, 1937	President	43,883,022		154,409,819	96.8
17. Colorado River, Tex.	Aug. 26, 1937	Congress	20,000,000	23,963,881		100.0
18. Colorado River flood works and LS, Ariz.-Calif.-Nev.	July 1, 1940	do	(4)		9,869,537	97.2
19. Columbia Basin, Wash.	Aug. 30, 1935	do	(376,631,000)			
Reauthorized, high dam.	Mar. 10, 1943	do	487,030,000		476,559,897	63.4
Additional capacity.	Jan. 5, 1949	Secretary	16,350,000			

See footnotes at end of table, p. 78.

TABLE A–1.—*Authorization and construction costs of reclamation projects—Projects existing or under construction as of Dec. 31, 1954*—Continued

Project and State	(1) Authorization		(2)	(3)	(4) Cost to date	
	Date	Authority	Original cost estimate	Actual total completed cost	Dec. 31, 1954	Percent complete
20. Crescent Lake Dam, Oreg.[1]	July 1, 1954	Congress	$297,000		$60,579	18.9
21. Dalton Gardens, Idaho.[1]	July 31, 1953	do	268,000		233,477	86.4
22. Deschutes, north unit, Oregon.	Nov. 1, 1937	President	8,000,000		12,233,523	84.1
23. Eden, Wyo.	Sept. 18, 1940	do	2,445,000		4,327,559	56.7
Completion	June 28, 1949	Congress	4,667,000			
24. Eklutna, Alaska	July 31, 1950	do	20,365,400		28,567,184	96.8
Additional authorization.	Aug. 31, 1953	do	12,634,600			
25. Fort Peck, Mont.-N. Dak.[3]	May 18, 1938	do	5,050,000		11,372,666	48.9
26. Fort Sumner, N. Mex.	June 29, 1949	do	1,798,000	$2,427,792		100.0
27. Frenchtown, Mont.	Sept. 21, 1935	President	220,000	290,797		100.0
28. Fruitgrowers Dam, Colo.	Jan. 11, 1938	do	200,000	200,309		100.0
29. Gila, Ariz.	June 21, 1937	do	19,474,964		40,656,749	86.1
Wellton-Mohawk division.	July 30, 1947	Congress	25,764,000			
30. Grand Valley, Colo.	Jan. 5, 1911	President	[4]	7,080,724		100.0
31. Grants Pass, Oreg.:[1]						
Northwest pipeline.	Oct. 12, 1949	Congress	100,000	[5]		100.0
Savage Rapids Dam.	July 9, 1952	do	700,000	[5] 656,599		100.0
32. Humboldt, Nev.	Nov. 6, 1935	President	2,000,000	1,215,594		100.0
33. Hungry Horse, Mont.	June 5, 1944	Congress	48,319,000		101,150,045	99.7
34. Huntley, Mont.	Apr. 18, 1905	Secretary	900,000	1,552,159		100.0
35. Hyrum, Utah	Nov. 6, 1935	President	938,000	953,854		100.0
36. Intake, Mont.	June 20, 1944	do	62,000	92,371		100.0
37. Kendrick, first unit, Wyoming.	Aug. 30, 1935	do	23,700,000		29,440,664	91.4
Alcova powerplant.	Sept. 20, 1949	Secretary	6,377,000			
38. Klamath, Oreg.-Calif.	May 15, 1905	do	4,400,000		14,820,779	72.1
Rehabilitation and betterment.					40,200	77.3
39. Lewiston Orchards, Idaho.	July 31, 1946	Congress	1,466,000	2,484,397		100.0
40. Lower Yellowstone, Mont.-N. Dak.	May 10, 1904	Secretary	1,200,000	3,633,219		100.0
41. Mancos, Colo.	Oct. 24, 1940	President	$1,475,000		3,895,173	99.9
Expansion	Dec. 20, 1944	do	393,000			
42. Middle Rio Grande, N. Mex.	May 17, 1950	Congress	30,179,000		6,264,338	26.9
43. Milk River, Mont.	Mar. 14, 1903	Secretary	1,250,000			
Saco Divide	Apr. 11, 1941	President	1,075,000	7,011,576		100.0
Dodson pumping	Mar. 17, 1944	do	62,000			
Fresno Dam	Aug. —, 1935	do	2,000,000		2,001,965	98.9
Rehabilitation and betterment.					737,615	85.8
44. Minidoka, Idaho-Wyo.	Apr. 23, 1904	Secretary	2,600,000			
Gooding	July 3, 1928	President	2,600,000	24,959,246		100.0
Upper Snake	Sept. 30, 1935	do	4,000,000			
North side pumping.	Sept. 30, 1950	Congress	11,395,000		2,234,424	22.9
45. Mirage Flats, Nebr.	Apr. 26, 1940	President	2,560,000	3,102,575		100.0
Completion	July 13, 1944	do	540,000			
46. Missoula Valley, Mont.	May 10, 1944	do	250,000	278,322		100.0
47. Missouri River Basin, various.	Dec. 22, 1944	Congress	[7] 830,976,600		334,256,390	11.4
48. Moon Lake, Utah	Nov. 6, 1935	President	1,500,000	1,799,856		100.0
49. Newlands, Nev.	Mar. 14, 1903	Secretary	1,250,000	8,063,823		100.0
50. Newton, Utah.	Oct. 17, 1940	President	618,000	712,592		100.0
Completion	Aug. 31, 1943	do	275,000			
51. North Platte, Wyo.-Nebr.	Mar. 14, 1903	Secretary	400,000			
Pathfinder Dam	May 3, 1904	do	1,000,000	19,527,628		100.0
Guernsey Dam	Apr. 30, 1925	President	1,780,000			
Rehabilitation and betterment.					2,718,660	74.3

See footnotes at end of table, p. 78.

TABLE A–1.—*Authorization and construction costs of reclamation projects—Projects existing or under construction as of Dec. 31, 1954*—Continued

Project and State	(1) Authorization		(2)	(3)	(4) Cost to date	
	Date	Authority	Original cost estimate	Actual total completed cost	Dec. 31, 1954	Percent complete
52. Ochoco, Oreg.[1]	June 29, 1948	Congress	$350,000	[2]	[2]	100.0
Additional funds.	Oct. 12, 1949	do	1,063,750			
53. Ogden River, Utah	Nov. 16, 1935	President	3,500,000	$5,013,283		100.0
54. Okanogan, Wash	Dec. 2, 1905	Secretary	432,300	1,505,629		100.0
55. Orland, Calif	Oct. 5, 1907	do	650,000	2,618,913		100.0
56. Owyhee, Oreg-Idaho	Oct. 12, 1926	President	18,000,000	19,119,520		100.0
57. Palisades, Idaho-Wyo.	Dec. 9, 1941	Secretary	(24,092,000)			
Reauthorized	Sept. 30, 1950	Congress	76,601,000		$36,352,135	48.9
58. Paonia, Colo	Mar. 18, 1939	President	(994,000)			
Reauthorization	June 22, 1947	Congress	3,030,000		1,592,342	23.8
59. Parker-Davis, Ariz.-Nev.,-Calif.	May 28, 1954	do	[3]			
Parker Dam power.	Aug. 30, 1935	do	19,469,500	26,029,208		100.0
Davis Dam	Apr. 14, 1941	Secretary	41,200,000		112,800,551	95.8
60. Pine River, Colo	June 17, 1937	President	3,240,000		3,463,568	98.6
61. Preston Bench, Idaho.	June 15, 1948	Congress	453,000	450,300		100.0
62. Provo River, Utah	Nov. 16, 1935	President	9,974,000		19,140,305	99.6
Aqueduct division.	Oct. 24, 1938	do	5,800,000		12,869,232	99.9
63. Rapid Valley, S. Dak.	Nov. 8, 1939	do	(2,470,000)			
Completion	Nov. 22, 1943	do	1,118,000	925,903		100.0
64. Rathdrum Prairie, Idaho:						
Post Falls	Jan. 29, 1944	do	300,000	363,951		100.0
Reapproved	Feb. 24, 1945	do	30,000			
Hayden Lake	June 9, 1947	Secretary	90,650	118,409		100.0
65. Rio Grande, Tex.-N. Mex.	Dec. 2, 1905	do	200,000	10,420,677		100.0
Caballo Dam	June 4, 1936	Congress	4,000,000			
Elephant Butte power and storage.	Aug. 9, 1937	do	8,905,400		16,182,568	99.5
66. Riverton, Wyo	June 5, 1920	do	6,777,025		20,799,746	85.5
Rehabilitation and betterment.					1,805,503	92.6
67. Salt River, Ariz	Mar. 14, 1903	Secretary	2,800,000	20,244,718		100.0
Rehabilitation and betterment.					4,554,981	75.9
68. San Luis Valley, Colo.	Feb. 1, 1940	Secretary	17,465,000		3,868,912	99.9
69. Sanpete, Utah	Nov. 6, 1935	President	375,000	433,940		100.0
70. Scofield, Utah	June 24, 1943	do	640,000	943,837		100.0
71. Shoshone, Wyo.-Mont.	Feb. 10, 1904	Secretary	2,250,000		21,284,559	96.3
Heart Mountain power.	June 19, 1945	do	900,000			
Rehabilitation and betterment.					611,634	86.6
72. Solano, Calif	Nov. 11, 1948	Secretary	45,577,000		5,032,696	10.7
73. Strawberry Valley, Utah.	Dec. 15, 1905	do	1,250,000	3,498,994		100.0
74. Sun River, Montana, Greenfields	Feb. 26, 1906	President	9,000,000	594,065		100.0
					9,442,656	97.2
75. Truckee storage, Nevada-California.	Sept. 21, 1935	do	1,000,000	1,092,423		100.0
76. Tucumcari, N. Mex.	Aug. 2, 1937	Congress	[4]		15,521,611	98.1
(Arch Hurley)	Nov. 1, 1938	President	8,155,000			
77. Umatilla, Oreg	Dec. 4, 1905	Secretary	1,000,000	5,310,339		100.0
78. Uncompahgre, Colo.:						
Gunnison	Mar. 14, 1903	do	1,500,000	8,965,959		100.0
Uncompahgre Valley.	June 7, 1904	do	1,000,000			
Taylor Park Dam.	Nov. 6, 1935	President	2,725,000			
79. Vale, Oreg	Oct. 21, 1926	do	3,590,000	4,866,824		100.0

See footnotes at end of table, p. 78.

TABLE A–1.—*Authorization and construction costs of reclamation projects—Projects existing or under construction as of Dec. 31, 1954*—Continued

Project and State	(1) Authorization		(2)	(3)	(4) Cost to date	
	Date	Authority	Original cost estimate	Actual total completed cost	Dec. 31, 1954	Percent complete
80. Vermejo, N. Mex.	Sept. 27, 1950	Congress	$2,679,000		$2,163,974	78.9
81. Weber Basin, Utah	Aug. 29, 1949	do	69,534,000		8,273,468	12.7
82. Weber River, Utah	Jan. 8, 1927	President	3,000,000	$2,725,885		100.0
83. Yakima, Wash	Dec. 12, 1905	Secretary	[9] 1,750,000	26,864,183		100.0
Roza	Nov. 6, 1935	President	15,000,000		18,231,681	83.4
Kennewick	June 12, 1948	Congress	10,736,000		6,625,177	50.2
84. Yuma, Ariz.-Calif.	May 10, 1904	Secretary	3,000,000	7,241,059		100.0
85. Yuma auxiliary, Arizona.	Jan. 25, 1917	Congress			685,981	59.1

[1] Authorization by appropriation acts, of date shown.
[2] Rehabilitation work classified as deferred maintenance.
[3] Construction with Army working funds.
[4] Original authorization for annual maintenance Mar. 3, 1925.
[5] Transmission system for Corps of Engineers powerplant; repayment included in Missouri River Basin.
[6] Not available.
[7] Excludes Corps of Engineers.
[8] Merger of 2 projects.
[9] Sunnyside and Tieton only.

TABLE A–2.—*Writeoff of construction costs by act of Congress (5), Dec. 31, 1954*

Project and State	Amount	Date of act	Percentage
Belle Fourche, S. Dak.	$379,032 1,009,274 27,240	May 25, 1926 Oct. 27, 1949 Jan. 30, 1954	30.3
Bitter Root, Mont.	2,310	do	.2
Boise, Idaho-Oreg.	82,394	May 25, 1926	.5
Carlsbad, N. Mex.	374,884	do	8.8
Frenchtown, Mont.	1,050	Jan. 30, 1954	.4
Grand Valley, Colo.	1,339,412	May 25, 1926	18.9
Huntley, Mont.	62,050	do	4.0
Klamath, Oreg.-Calif.	19,590 75,154	Aug. 2, 1951 May 25, 1926	.5
Lower Yellowstone, Mont.-N. Dak.	391,789	do June 6, 1948	10.8
Milk River, Mont.	2,320,196	May 25, 1926 July 3, 1930 June 23, 1952	33.1
Minidoka, Idaho-Wyo.	2,288	May 25, 1926	0
Newlands, Nev.	4,462,070	do	55.3
North Platte, Wyo.-Nebr.	49,856	do	.3
Okanogan, Wash.	810,408 165,749 2,347	do May 25, 1928 Jan. 30, 1954	65.0
Rio Grande, Tex.-N. Mex.	357,736	May 25, 1926	3.4
Riverton, Wyo.	608,034	June 23, 1952	2.5
Shoshone, Wyo.-Mont.	1,545,129 38,108 9,843	May 25, 1926 Jan. 30, 1954 May 6, 1949	7.2
Sun River, Mont.	297,752 187,330	July 31, 1953 May 25, 1926	4.7
Umatilla, Oreg.	888,340	do	16.7
Uncompahgre, Colo.	2,896,634	do	32.3
Yakima, Wash.	4,215 3,789	do Jan. 30, 1954	0
Yuma, Ariz.-Calif.	383,723	Sept. 2, 1950	5.3
Yuma auxiliary, Arizona	1,022,382	do June 13, 1949	[1]

[1] Applies to investment in Yuma project.

NOTE.—Includes chargeoffs by reclassification of land subsequent to, but under the authority of, act of May 25, 1926. Does not include costs declared nonreimbursable under water conservation utilization and related acts, or chargeoffs of abandoned projects.

The amounts charged off for the inactive or abandoned projects are: Buford-Trenton, $221,423; Garden City, $334,475; King Hill, $1,877,732; and Williston, $409,095.

TABLE A–3.—*Repayment of reclamation projects*

Project and State	(6) Date repayment started [1]	(7) Amount repaid to Dec. 31, 1954 [2]		(8) Estimated ultimate repayment	(9) Estimated date repayment complete
		Matured repayment contracts	Power revenues		
1. Arnold, Oreg.	1952	$23,278		$206,922	1987
2. Austin, W. C., Oklahoma	1951	328,000		3,080,000	1989
3. Avondale, Idaho	[3]			277,000	[3]
4. Baker, Oreg.	1937	106,737		[4] 281,589	1976
5. Balmorhea, Tex.	1948	18,053		255,600	1987
6. Belle Fourche, S. Dak.	1914	1,442,525		[5] 3,958,359	2029
7. Bitter Root, Mont.	1937	351,012		[5] 1,040,078	1995
8. Boise, Idaho-Oreg.:					
Arrowrock division	1918				
Payette division	1923	11,437,643	$2,811,450	[5] 50,041,312	2034
Anderson Ranch	1942				
9. Boulder Canyon, Ariz.-Calif.-Nev.:					
Hoover Dam and powerplant	1937		[6] 94,935,782	173,271,700	2002
All-American Canal system	1945		[6] 2,573,945	63,044,046	1995
10. Buffalo Rapids, Mont.:					
1st division	[3]			[3] 930,000	[3]
2d division	[3]			[3] 696,000	[3]
11. Buford-Trenton, N. Dak.	[3]			[3] 548,000	[3]
12. Burnt River, Oreg.	1940	232,411		601,026	1980
13. Cachuma, Calif.	1952			43,816,000	[7]
14. Carlsbad, N. Mex.	1910	1,755,592		3,867,479	1986
15. Central Valley, Calif.	1945		60,772,461	698,853,000	[7] 2013
16. Colorado-Big Thompson, Colo.	1943		[8] 5,706,755	160,355,000	2041
17. Colorado River, Tex.	1985			5,510,500	2020
18. Colorado River FW and LS., Arizona-California-Nevada				0	
19. Columbia Basin, Wash.	1941	38,285	76,858,358	753,874,000	[9] 2024
20. Crescent Lake Dam, Oreg.	[3]			320,000	[3]
21. Dalton Gardens, Idaho	[10]			270,200	[3]
22. Deschutes, north unit, Oregon	1942	199,710		12,925,242	2034
23. Eden, Wyo.	[10]			[11] 7,268,569	[3]
24. Eklutna, Alaska	1955			29,500,000	2004
25. Fort Peck, Mont.-N. Dak.	1944		5,857,448	23,277,000	[12]
26. Fort Sumner, N. Mex.	1954	30,402		2,427,792	2033
27. Frenchtown, Mont.	1939	51,388		290,797	1989
28. Fruitgrowers Dam, Colo.	1942	48,895		200,309	1981
29. Gila, Ariz.	1952	3,958		47,225,849	[9] 2025
30. Grand Valley, Colo.	1928	1,343,398		5,741,312	2029
31. Grants Pass, Oreg.	1953	7,500		950,000	1993
32. Humboldt, Nev.	1943	431,483		1,215,594	1979
33. Hungry Horse, Mont.	1953	971,138	6,017,384	81,830,683	2003
34. Huntley, Mont.	1908			1,490,109	1988
35. Hyrum, Utah	1938	256,764		953,854	1997
36. Intake, Mont.	1952	1,808		46,900	1992
37. Kendrick, 1st unit, Wyoming	1940		[8] 6,111,517	32,198,315	[8] [9] 2015
38. Klamath, Oreg.-Calif.	1909	2,791,573		20,557,166	[8] [7] 1984
39. Lewiston Orchards, Idaho	1953	42,464		2,484,397	2008
40. Lower Yellowstone, Mont.-N. Dak.	1909	2,165,626		3,241,430	[13]
41. Mancos, Colo.	1955	15,000		900,000	2014
42. Middle Rio Grande, N. Mex.	[10]			16,740,000	[3]
43. Milk River, Mont.	1929	1,171,987		7,576,380	2066
Fresno Dam	1944				1992
44. Minidoka, Idaho-Wyo.	1908				[7]
Gooding	1929	15,425,286	4,381,254	25,956,958	1968
Upper Snake	1941				1980
North side pumping	[3]			9,759,000	[3]
45. Mirage Flats, Nebr.	1952	4,000		846,300	1989
46. Missoula Valley, Mont.	[10]			45,000	[3]
47. Missouri River Basin, various	1950	85	8,672,150	[14]	[14]
48. Moon Lake, Utah	1944	477,680		1,799,856	1984
49. Newlands, Nev.	1908	2,678,095		3,601,753	1992
50. Newton, Utah	1949	61,250		350,000	1989
51. North Platte, Wyo.-Nebr.	1909	16,070,449	3,941,145	23,137,772	[13]
52. Ochoco, Oreg.	[13]			500,000	[13] [15]
53. Ogden River, Utah	1944	1,100,971		5,013,283	2011
54. Okanogan, Wash.	1909	222,787		527,125	[13]
55. Orland, Calif.	1917	1,446,826		2,618,913	[8] 1989
56. Owyhee, Oreg.-Idaho	1940	1,842,473		19,119,520	1939
57. Palisades, Idaho-Wyo.	[10]			52,385,000	2018
58. Paonia, Colo.	[10]			6,529,243	[9] [12]
59. Parker-Davis, Ariz.-Nev.-Calif.	1943		22,565,111	143,783,559	2007
60. Pine River, Colo.	1944	258,340		1,713,061	1984
61. Preston Bench, Idaho	[10]			450,300	[9] 2022

See footnotes at end of table, p. 80.

TABLE A–3.—*Repayment of reclamation projects*—Continued

Project and State	(6) Date repayment started [1]	(7) Amount repaid to Dec. 31, 1954 [2] Matured repayment contracts	(7) Power revenues	(8) Estimated ultimate repayment	(9) Estimated date repayment complete
62. Provo River, Utah	1948			$32,014,537	[7] 2006
63. Rapid Valley, S. Dak	1948	$87,500		925,903	(7)
64. Rathdrum Prairie, Idaho:					
Post Falls	1950	28,500		190,000	1990
Hayden Lake	1949	22,878		118,409	1992
65. Rio Grande, Tex.-N. Mex	1923	7,243,011		10,068,941	1969
Elephant Butte power and storage	1941		$2,775,930	13,709,086	1989
66. Riverton, Wyo	1944	554,451	[8] 547,135	23,710,966	(4)
Rehabilitation and betterment				1,950,000	
67. Salt River, Ariz	1918	12,783,935		[8] 24,913,902	1979
68. San Luis Valley, Colo	(10)			2,520,000	[9] 1999
69. Sanpete, Utah	1940	137,851		433,940	1980
70. Scofield, Utah	1945	74,200		247,000	1985
71. Shoshone, Wyo.-Mont	1908	2,461,174	[8] 3,611,927	21,217,920	(12)
Heart Mountain power					1961
72. Solano, Calif	(3)			45,979,000	(3)
73. Strawberry Valley, Utah	1916	2,512,683		3,498,994	1997
74. Sun River, Mont	1908	1,448,168		9,827,469	(5 12)
75. Truckee storage, Nevada-California	1943	300,340		1,000,000	1983
76. Tucumcari, N. Mex	1955	15,285		5,901,897	1955
77. Umatilla, Oreg	1908	498,010		4,422,000	(7 13)
78. Uncompahgre, Colo	1924	1,116,836		6,069,325	1949
79. Vale, Oreg	1946	445,491		4,866,824	2021
80. Vermejo, N. Mex	(10)			2,010,080	[9] 2038
81. Weber Basin, Utah	(10)			57,694,000	(9)
82. Weber River, Utah	1937	1,627,557		2,725,885	1968
83. Yakima, Wash	1908	13,351,058	760,217	26,856,179	(13 16)
Roza	1947			21,858,735	2021
Kennewick	(10)			12,160,000	[9] 1997
84. Yuma, Ariz.–Calif	1911	5,090,247	1,007,463	6,857,336	1981
85. Yuma auxiliary, Arizona	1921			1,160,061	[7] 2012

[1] Applies to repayment of total project. Repayment period for specific water users organizations may vary within the project.
[2] Portion of water rentals, service contracts, lease revenues, etc., applicable to construction repayment, not shown.
[3] Repayment contract under negotiation.
[4] Includes suspended charges.
[5] Includes rehabilitation and betterment in process.
[6] Federal share of district power revenues and Mexican water payments.
[7] Water service or rental contracts without fixed termination date.
[8] Excludes income for 6 months of fiscal year 1955 which is included under Missouri River Basin.
[9] Dependent on length of construction and development period.
[10] Repayment not yet due.
[11] Includes revenue from Colorado River storage project.
[12] Included in Missouri River Basin repayment schedule.
[13] Payout period indefinite, based on crop production.
[14] Not available pending economic analysis.
[15] To begin not later than 1968.
[16] Sunnyside and Tieton paid out.

STATEMENT ON PAYOUT PERIOD FOR SELECTED RECLAMATION PROJECTS, JUNE 1, 1955

I. Projects with specific legislation authorizing length of payout period in excess of 40 years:

1. Mancos project, Colorado: Public Law 109, 80th Congress, 1st session, approved by the President June 25, 1947, authorized payout period of 60 years.

2. Paonia project, Colorado: Public Law 117, 80th Congress, 1st session, approved by the President June 25, 1947, authorized payout period of 68 years.

3. Gila project, Arizona: Public Law 272, 80th Congress, 1st session, approved by the President July 30, 1947, authorized payout period of 60 years.

4. Provo River project, Utah: Public Law 462, 80th Congress, 2d session, approved by the President March 29, 1948, authorized extension statutory 40-year payout period sufficient to return increased cost of project construction. It is estimated that a 60-year period will be required for the Provo River Water Users' Association and about 50 years for the Metropolitan Water District of Salt Lake City.

5. Yakima project, Kennewick division, Washington: Public Law 629, 80th Congress, 2d session, approved by the President June 12, 1948, authorized payout period of 66 years.

6. Lewiston Orchards project, Idaho: Public Law 569, 79th Congress, 2d session, approved by the President July 31, 1946, authorized payout period of 50 years.

7. Preston Bench project, Idaho: Public Law 644, 80th Congress, 2d session, approved by the President June 15, 1948, authorized payout period of 74 years.

8. Deschutes project, Oregon (Ochoco Dam): Public Law 841, 80th Congress, 2d session, approved by the President June 29, 1948, authorized emergency reconstruction Ochoco Dam, subject to allocations under section 7 of the Reclamation Project Act of 1939, and repayment reimbursable amounts under terms satisfactory to water users and Bureau of Reclamation. Repayment contract of April 24, 1950, with Ochoco Irrigation District provides for payout period of 60 years.

9. North Platte project, Nebraska: Public Law 55, 80th Congress, 2d session, approved by the President May 25, 1948, authorized execution amendatory repayment contract with Northport Irrigation District. Amendatory contract negotiated in 1948 provided that the district would pay the construction obligation of $952,046, at the rate of $3,500 annually. Total payout period is indefinite because the $3,500 annual installment can be used by the district to meet high O. and M. costs in the event the district's share of power revenues is inadequate to cover O. and M. costs.

10. Eden project, Wyoming: Public Law 132, 81st Congress, 1st session, approved by the President June 28, 1949, authorized payout period of 60 years.

11. Fort Sumner project, New Mexico: Public Law 192, 81st Congress, 1st session, approved by President July 29, 1949, left payout period to Secretary's judgment of district's payment capacity, but with repayment within useful life of project. Repayment contract of September 14, 1949, with Fort Sumner Irrigation District, provides repayment period of 80 years.

12. Weber Basin project, Utah: Public Law 273, 81st Congress, 1st session, approved by the President August 29, 1949, authorized payout period of 60 years.

13. Buffalo Rapids project, Montana: Public Law 336, 81st Congress, 1st session, approved by the President October 10, 1949, authorized payout period of 60 years.

14. Vermejo project, New Mexico: Public Law 848, 81st Congress, 2d session, approved by the President September 27, 1950, left payout period to Secretary's judgment of district's maximum payment capacity. Repayment contract of August 7, 1952, with Vermejo Conservancy District, provides repayment period of 76 years.

15. Palisades project, Idaho (North Side pumping division): Public Law 864, 81st Congress, 2d session, approved by the President September 30, 1950, authorized payout period of 50 years.

16. Canadian River project, Texas: Public Law 898, 81st Congress, 2d session, approved by the President December 29, 1950, authorized payout period of 50 years.

17. Collbran project, Colorado: Public Law 445, 82d Congress, 2d session, approved by the President July 3, 1952, authorized payout period of 50 years.

18. Chief Joseph Dam project (Foster Creek division), Washington: Public Law 540, 83d Congress, 2d session, approved by the President July 27, 1954, authorized payout period of 50 years.

19. Santa Margarita project, California: Public Law 547, 83d Congress, 2d session, approved by the President July 28, 1954, authorized payout period of 56 years.

20. Rogue River Basin project (Talent division), Oregon: Public Law 606, 83d Congress, 2d session, approved by President August 20, 1954, authorized payout period of 60 years.

21. Santa Maria project, California: Public Law 774, 83d Congress, 2d session, approved by the President September 3, 1954, authorized payout period of 50 years.

22. Yuma auxiliary project, Arizona: Public Law 102, 81st Congress, 1st session, approved by the President June 13, 1949, authorized payout period of 60 years.

II. Payout period of reclamation projects where water-service contracts are negotiated under section 9 (e) and 9 (c) (2) of Reclamation Project Act of 1939:

1. Santa Barbara project (Cachuma unit), California: Finding of feasibility approved by the Secretary of the Interior, and with the approval of the President, forwarded to the Congress March 24, 1948; published as House Document 587, 80th Congress, 2d session. Estimated payout period 50 years.

2. Solano County project, California: Finding of feasibility approved by the Secretary of the Interior and, with the approval of the President, forwarded to the Congress January 28, 1949. Estimated payout period 50 years.

3. Central Valley project, California: House Document No. 146, 80th Congress, 1st session, February 24, 1947, estimates that water service contracts to be negotiated under the provisions of section 9 (e) of the Reclamation Project Act of 1939 with irrigation districts will return in 55 to 60 years the costs assigned for repayment by irrigation. New units of the Central Valley project are recommended for addition on the basis of payout in 50 years after addition of the unit.

4. Missouri River Basin project: Water-service contracts, as authorized by the Reclamation Project Act of 1939, are also being negotiated with irrigation districts of the Missouri River Basin project. The term of these contracts is 40 years. Following expiration of the water-service contract, a subsequent contract is required to be negotiated. The extent to which subsequent contracts should require return of additional construction costs is under study at the present time. The first water-service contract for this project is scheduled to expire by 1990.

Where distribution systems are to be constructed in addition to water-supply works, a repayment contract as authorized by section 9 (d) of the Reclamation Project Act of 1939 is negotiated providing for the districts' payments thereon in not to exceed 40 years following the close of not to exceed a 10-year development period.

PART III

Extension of repayment periods resulting from execution of contracts pursuant to sec. 7 of the Reclamation Project Act of 1939 or the Rehabilitation and Betterment Act of Oct. 7, 1949

Project and authorizing act	Irrigation district	State	Date of amended contract	Year initial construction payment due	Overall payout period [1]	
					Previous contract (years)	Amended contract (years)
Act of May 6, 1949 (63 Stat. 62):						
Bitter Root	Bitter Root	Montana	Nov. 29, 1949	1937	40	[2] 58
Klamath	Shasta View	Oregon	Aug. 20, 1948	1928	40	50
Okanogan	Okanogan	Washington	Sept. 20, 1948	[3] 1909	50	73
Shoshone	Willwood	Wyoming	May 13, 1949 [4]	1951	(5)	[2] 55
Uncompahgre	Uncompahgre Water Users Association	Colorado	Dec. 13, 1948	[3] 1924	57	125
Yakima	Kittitas Reclamation District	Washington	Jan. 20, 1949	1934	[6] 78	102
Act of Oct. 27, 1949 (63 Stat. 941):						
Belle Fourche	Belle Fourche	South Dakota	Nov. 29, 1949	[3] 1914	83	[2] 115
Shoshone	Deaver	Wyoming	Nov. 14, 1949	[3] 1918	[6] 97	[2] 231
Umatilla	Stanfield	Oregon	Nov. 18, 1949	1935	43	(5)
Do	Westland	do	do	1932	40	(5)
Vale	Vale-Oregon	do	Apr. 11, 1949	1946	39	[2] 75
Yakima	Prosser	Washington	Nov. 25, 1949	1919	46	[2] 64
Act of Aug. 5, 1950 (64 Stat. 415, ch. 593): Ogden River	Ogden River Water Users Association	Utah	May 23, 1950	1944	40	67
Act of Aug. 5, 1950 (64 Stat. 415, ch. 594): Hyrum	South Cache Water Users Association	do	May 24, 1950	1938	43	59
Act of June 23, 1952 (66 Stat. 151, 152, 153):						
Frenchtown	Frenchtown	Montana	Sept. 6, 1951	1939	40	50
Milk River	Glasgow	do	Sept. 10, 1952	1932	40	[2] 134
Do	Malta	do	do	1932	40	[2] 124
Riverton	Midvale	Wyoming	June 26, 1952	1944	[2] 60	[2] 137
Owyhee	9 districts	Oregon–Idaho	Aug. 29, 1951	1940	40	99
Act of July 17, 1952 (66 Stat. 754, 755):						
North Platte	Gering-Fort Laramie [7]	Nebraska	Sept. 22, 1952	1922	[2] [8] 115	[2] 115
Do	Goshen [7]	Wyoming	do	1929	[2] [8] 115	[2] 126
Do	Pathfinder [7]	Nebraska	do	[3] 1909	[6] 95	86
Act of June 18, 1954 (68 Stat. 254):						
Umatilla project	Hermiston	Oregon	July 6, 1954	[3] 1908	[6] 151	[3] 148
Do	West extension	do	do	[3] 1918	[6] 129	200

See footnotes at end of table, p. 84.

PART III—Continued

Extension of repayment periods resulting from execution of contracts pursuant to sec. 7 of the Reclamation Project Act of 1939 or the Rehabilitation and Betterment Act of Oct. 7, 1949—Continued

Project and authorizing act	Irrigation district	State	Date of amended contract	Year initial construction payment due	Overall payout period [1]	
					Previous contract (years)	Amended contract (years)
Act of June 30, 1954 (68 Stat. 359): Yakima	Roza	Washington	July 22, 1953	1947	40	74
Act of July 27, 1954 (68 Stat. 534): Pine River	Pine River	Colorado	Nov. 30, 1953	1944	38	40
Act of Aug. 10, 1954 (68 Stat. 679): Deschutes	North unit	Oregon	Feb. 13, 1954	1956	40	78
Act of Aug. 21, 1954 (68 Stat. 762): Minidoka	American Falls No. 2:					
	Old lands	Idaho	Oct. 14, 1954	1929	20	28
	New lands	do	do	1947	40	47
Act of Aug. 24, 1954 (68 Stat. 794): Boise	Black Canyon:					
	1st unit	do	Sept. 2, 1954	1923	[6] 37	38
	2d unit	do	do	1948	40	[7] 86
Rehabilitation and Betterment Act of 1949:						
Grand Valley	Grand Valley Water Users Association	Colorado	Mar. 5, 1951	1931	43	98
Sun River	Fort Shaw	Montana	July 11, 1951	[3] 1908	[5] 64	[8] 81
Okanogan	Okanogan	Washington	Aug. 15, 1951	[3] 1909	73	86
Shoshone	Willwood	Wyoming	June 30, 1952	1951	55	69

[1] Computed from year initial construction payment due under initial repayment contract with individual water users or irrigation district.

[2] Repayment contract obligation includes total cost of rehabilitation and betterment program which is merged with basic construction obligation.

[3] Date construction payments scheduled to begin under original individual water right contracts.

[4] This is initial contract for this district.

[5] Previous contract payout period indefinite because annual construction charges based on 5-percent gross crop value repayment plan authorized by act of Dec. 5, 1924. Payout period shown estimated on basis of gross crop values for the years 1939–44.

[6] No fixed repayment obligation or fixed payout period. Full return of costs to Government at rates specified in contract probably will not be accomplished within useful life of project works (153 years overall for Stanfield and 328 years overall for Westland).

[7] The main purpose of this amendatory contract was the acquisition by the United States of the water users' interests in the hydroelectric powerplants of the North Platte project. Incidental to the negotiated power settlement were changes in the schedule of irrigation construction costs repayment resulting from the reduction in the overall repayment obligation.

NOTE.—As indicated in findings submitted to the congressional committees pursuant to Rehabilitation and Betterment Act of 1949, repayment of the cost of rehabilitation and betterment work will be accomplished within the payout period of existing repayment contracts on the following: Langell Valley Irrigation District, Klamath project; Chinook districts of Milk River project; Northport and Pathfinder Irrigation Districts, and Warren Act contractors on North Platte project; Orland project, Salt River project, and Yakima project (storage division).

IV. Project planning reports involving proposed projects where the repayment period for return of construction costs allocated to be repaid by irrigation exceeds 40 years:

1. Colorado River storage project and participating projects: Irrigation repayment period for participating projects, 50 years.
2. Fryingpan-Arkansas project, Colorado: Irrigation repayment period, 51 years.
3. Canton project, Oklahoma: Irrigation repayment period, 70 years.
4. Crooked River project, Oregon: Irrigation repayment period, 50 years.
5. Ventura River project, California: Irrigation repayment period, 50 years.
6. Washoe project, California-Nevada: Irrigation repayment period, 52 years.

V. Repayment contracts under authority of the act of December 5, 1924:

Subsection F, section 4, of the act of December 5, 1924, provided for the repayment of construction charges on the basis of annual installments to be computed as follows: "The installment of the construction charge per irrigable acre payable each year shall be 5 percent of the average gross annual acre income for the 10 calendar years first preceding * * *. These annual payments shall continue until the total construction charge against each unit is paid."

It will be noted that this act did not require payout within any prescribed term of years. Length of payout is determined by the amount of gross per acre realized over the years on the project.

This 5-percent plan of payment was repealed by section 47 of the act of May 25, 1926. During its short life repayment contracts using the 5-percent plan of payment were executed with 21 water-user organizations.

Of the 21 organizations having 5-percent-plan contracts in 1949, 2 organizations (New York Irrigation District, Boise project and Burley Irrigation District, Minidoka project) have paid in full their obligations under those contracts; 4 organizations have entered into new contracts pursuant to section 4 of the 1939 act under which payment will be made in accordance with the so-called normal and percentage variable plan; 8 organizations have entered into section 7 (1939 act) amendatory repayment contracts which provide a different basis of repayment (covered in part III); and 7 organizations as of June 1, 1955, still had contracts based on the 5-percent plan. Following is a list of the organizations still paying under the 5-percent plan, together with an estimate of overall payout periods:

	Years
Lower Yellowstone project, Montana:	
Lower Yellowstone Irrigation District No. 1	55
Lower Yellowstone Irrigation District No. 2	55
Shoeshone project, Wyoming: Shoshone Irrigation District	72
Strawberry Valley project, Utah: Highline Division, Spanish Fork Division	82
Sun River project, Montana:	
Fort Shaw Irrigation District	64
Greenfields Irrigation District	120

Mr. ASPINALL. The Chair recognizes the gentleman from Washington at this time.

Mr. WESTLAND. I yield to the gentleman from Idaho.

Mr. BUDGE. Mr. Riter, I hope you get to answer one question before we quit this morning. I am beginning to doubt it.

As I understand your 2 plans, referring particularly to table 5, which you have on page 16 of the testimony you gave before the committee, under 1 of those plans your average annual generation is 900,000 kilowatts, and under the other one it is 715,000 kilowatts. Is that correct?

Mr. RITER. You are talking about table 5, sir, or some other table? Table 5 does not show that.

Mr. BUDGE. Table 5 of the Senate committee hearings at the time you appeared before the Senate committee.

Mr. RITER. Table 5, according to my statement here, is the alternative method of analysis, and that shows salable generation with present flows of 6,530 million kilowatt-hours, and that would decrease. By the time you get to future flows your salable generation would be 5,080 million kilowatt-hours.

In making my analysis, I averaged the figures for present, for 1985, and for future, and got 5,850 million kilowatt-hours of annual salable generation.

Mr. BUDGE. If you divide that by 8,760, you come up with something less than 700,000 kilowatts average annually. In any event, this is substantially less than the plan of 900,000.

I notice that Mr. Ostrander here has a figure of 1,122,000 kilowatts. Which is the right average annual addition to the system—700,000, 900,000, or 1,122,000?

Mr. RITER. I testified in my opinion the figure 900,000, bearing in mind system prime power. You see we are talking, Congressman Budge——

Mr. ASPINALL. The time of the gentleman from Washington has expired. Now the Chair recognizes the gentleman from Montana, Mr. Metcalf.

Mr. METCALF. Mr. Chairman, I would say as cosponsor of this legislation I am thoroughly convinced of the feasibility of authorizing high Hells Canyon Dam. These are the gentlemen with the answers. The man with the questions is the gentleman from Idaho. I, therefore, yield my time to Mr. Budge.

Mr. BUDGE. I appreciate the courtesy of the gentleman from Montana.

Would you finish that as to the variance between your figure and Mr. Ostrander's? There is quite a little variance.

Mr. RITER. Congressman, there are two methods of analysis. One method is the one now in vogue in the Northwest of computing system prime power. I have concluded during the amortization period the system prime power will average 900,000 kilowatts. That will vary when you first add the project to the line with the presently authorized projects constructed, from 1,108,000, the figure I got, which compares with Mr. Ostrander's 1,122,000.

The differences can be reconciled. Mine is a more conservative study. I would not argue between 1,108,000 and 1,122,000.

The table on page 10, table 3 there, shows my estimates by various periods. For example, if I add the high Hells Canyon and assume 1985 conditions of stream flow, I would get 839,000 prime kilowatts. That is with existing downstream plants. There are 223 feet of power head now in operation.

Then, of course, as the system grows, as more storage is added to the system, the length of the critical period which determines system prime power lengthens and Hells Canyon's contribution becomes less. For example, I show——

Mr. BUDGE. It becomes less important to the overall picture as the development of the river continues?

Mr. RITER. That is right. That is the reason why I have concluded in my mind a figure of 900,000 kilowatts of prime power represents what I consider the 50-year average contribution. Of course, that will vary through the 50 years, depending upon the state of

the system, how much storage we have, and how much downstream powerhead there is developed.

Mr. BUDGE. Mr. Riter, in order that we might understand just what kind of a project we are talking about here—in order to get the benefit from the high Hells Canyon Dam, certain other things have to be constructed; do they not?

Mr. RITER. In order to get the complete benefits, Congressman; yes, sir.

Mr. BUDGE. Would you tell the committee what those are and what their cost is?

Mr. RITER. I cannot tell you the cost, but there are presently authorized a number——

Mr. ASPINALL. The time of the gentleman from Montana has expired. The Chair recognizes the gentleman from Arizona, Mr. Rhodes.

Mr. RHODES. I yield my time to the gentleman from Idaho.

Mr. BUDGE. Continuing that, I would simply call the attention of the members of the committee to page 2 of the Secretary's report on this bill—I guess the chairman and I are the only ones that have a copy—that the amount set forth there, including another 6 dams—John Day, Priest Rapids, Ice Harbor, Lower Monumental, Little Goose, and Lower Granite—at a total cost, inclusive of transmission lines, but in addition to the cost of Hells Canyon, of $1,211 million.

Is it necessary, Mr. Riter, that those additional plants and additional generators in already existing plants be added in order to get the full benefits claimed for Hells Canyon Dam?

Mr. RITER. Yes, sir. But may I supplement that by saying that those other dams will also have power benefits of their own.

Mr. BUDGE. I appreciate that, but I am just talking about the magnitude of the Federal investment here to supplement my statement that we are talking about a project that is up in the billions when we get all of the benefits claimed.

Another thing, Mr. Riter. During what months would water be pouring into the high Hells Canyon Dam under your operating plan?

Mr. RITER. Generally speaking, it would be flood season—May, June, and July.

Mr. BUDGE. How much power would you be generating in those 3 months?

Mr. RITER. It would be practically negligible.

Mr. BUDGE. What would it be during May, June, and July?

Mr. RITER. I do not recall the figure offhand, but it would be in the neighborhood of maybe as much as 100,000 kilowatts; might be a little bit less.

Mr. BUDGE. How many cubic feet per second would you be releasing?

Mr. RITER. I contemplated if necessary to fill the reservoir we could restrict the releases to 2,000 cubic feet per second.

Mr. BUDGE. At 2,000 feet per second how many kilowatts would you be generating?

Mr. RITER. Roughly 80,000.

Mr. ASPINALL. The time of the gentleman from Arizona has expired. The chair recognizes the gentleman from California, Mr. Sisk.

Mr. SISK. I yield to the gentleman from Pennsylvania.

Mr. SAYLOR. Mr. Riter, I find in here you have used an integrated system in arriving at your figures. Is that right?

Mr. RITER. Yes, sir. On it—Yes, sir, it is.

Mr. SAYLOR. That is then based upon a complete hydro system; is that correct?

Mr. RITER. Yes, sir.

Mr. SAYLOR. If the pattern of the Pacific Northwest follows the pattern which has taken place in California and it follows the pattern which has taken place in the Tennessee Valley and the rest of the United States, would it be necessary to install steam plants sometime within the foreseeable future?

Mr. RITER. I believe that is so. And that, Congressman Saylor, is one reason why I also analyzed this on the so-called alternative method, which is the power output figure which is shown on table 5 and the cost data showing on the last table, table 8.

Mr. SAYLOR. When do you estimate it will be necessary to install steam-generating plants in the Pacific Northwest to supplement hydro power?

Mr. RITER. I think Mr. Ostrander might better answer that question than I. He has made some studies on it.

Mr. OSTRANDER. I think that depends on whether and to what extent Congress goes ahead with hydropower. I believe the phase C–2 system probably would carry us up to 1970 on a hydro basis, somewhere in that neighborhood.

Mr. SAYLOR. And in 1970, or 15 years from now, you state that you will need thermal generation in the Pacific Northwest?

Mr. OSTRANDER. Not necessarily. There——

Mr. ASPINALL. The time of the gentleman from California has expired. The chair recognizes the gentleman from Idaho, Mr. Budge.

Mr. BUDGE. Mr. Ostrander, you testified a few minutes ago that you expected power shortage on your system by the year 1960. Is that correct?

Mr. OSTRANDER. A power shortage in the Pacific Northwest upon all of the systems considered as a whole.

Mr. BUDGE. What is the percentage of your system for the entire Northwest—about 58 percent; is it not?

Mr. OSTRANDER. A little more than half; yes, sir.

Mr. BUDGE. Incidentally, what is the size of the Bonneville Power Administration? How many kilowatts do you distribute a year?

Mr. OSTRANDER. How many kilowatt-hours?

Mr. BUDGE. Yes.

Mr. OSTRANDER. Our sales in 1954 fiscal year were in the neighborhood of 20 billion kilowatt-hours.

Mr. BUDGE. How does that compare with the Idaho Power Co.?

Mr. OSTRANDER. Several times larger, I should imagine.

Mr. BUDGE. What is your installed capacity? It is in the neighborhood of 3 million kilowatts; is it not?

Mr. OSTRANDER. I believe it is something over 3 million kilowatts. This 12-dam system when finished will be around 6 million.

Mr. BUDGE. The Idaho Power Co. is 345,000. So I understand it is 10 times as big as they are right now and will be 20 times as big when you get completed.

You do not anticipate any surplus power on your system, do you?

Mr. OSTRANDER. Cannot see any now.

Mr. BUDGE. If Hells Canyon is going to be producing 80,000 kilowatts, in that neighborhood, for at least the months of May, June, and July of each year, where are you going to get the 500,000 kilowatts of power that are supposed to go to Idaho the year around?

Mr. OSTRANDER. At that time, the run-of-river plants have an excess.

Mr. ASPINALL. The time of the gentleman from Idaho has expired. The Chair recognizes the gentleman from Texas, Mr. Rutherford.

Mr. Udall, you were not in the room when we divided the time.

Mr. RUTHERFORD. I yield my time to Mrs. Green.

Mrs. GREEN. I would like to address a question to Mr. Hoisington. You made the statement here that due to your experience at Hungry Horse you have revised the cost estimates on Hells Canyon. Would you elaborate on that, please, for 2 minutes?

Mr. HOISINGTON. Congresswoman Green, based on that experience that we had at Hungry Horse, we found that our total engineering and overhead costs ran approximately 15 percent of the total construction costs. In our previous estimate on Hells Canyon of $356,810,000 we had some 19.5 percent and so I reduced the engineering and overhead by that amount.

Also I reanalyzed the cost of the powerplant and reduced that by a similar amount. And in accordance with the testimony that I had given at the Federal Power Commission, in view of the fact that there were several other items that I felt were estimated somewhat high, I eliminated that amount also, which total came down to about 12.5 percent reduction in cost.

Mrs. GREEN. So that the revised figures then are $308 million for the construction of Hells Canyon Dam?

Mr. HOISINGTON. That is correct, based upon the testimony.

Mr. ASPINALL. The time of the gentleman from Texas has expired. The Chair recognizes the gentlewoman from Oregon on her own time.

Mrs. GREEN. Mr. Hoisington, the inference was left a moment ago that Hells Canyon would not be worth as much without these six additional dams. Is that your opinion? Or is there a tremendous importance just in the Hells Canyon construction by itself in the kilowatt-hours that will be furnished?

Mr. HOISINGTON. My testimony has been based on——

Mrs. GREEN. Mr. Riter rather.

Mr. RITER. Yes. I think Mr. Ostrander's statement shows that even if Hells Canyon is added to the present system it will have value.

Mrs. GREEN. The construction of these other six dams is not necessary for that then?

Mr. RITER. If you construct the other six dams, then naturally you will have more head through which you can utilize your storage and, therefore, get more benefit.

I would not want to leave the implication or indication that Hells Canyon is infeasible if you just built it and did not increase the downstream system.

Mr. BUDGE. Will the gentleman yield to me?

Mr. SAYLOR. Mr. Chairman.

Mrs. GREEN. I will yield to the gentleman from Idaho.

Mr. BUDGE. By the same token, Mr. Riter, in order to get all of the claimed benefits for the Hells Canyon Dam, these other projects must be constructed; is that correct?

Mr. RITER. That is correct. But Mr. Ostrander has testified if you built Hells Canyon with the present system it is still feasible.

Mr. ASPINALL. The Chair would ask unanimous consent that the gentleman from Arizona, Mr. Udall, may be privileged to have his minute and three-quarters if he so desires.

Mr. SAYLOR. Reserving the right to object, and I will not object, I would like to insert in the record then, following the lady from Oregon's questioning in regard to the cost of Hungry Horse Dam and the reduction in the cost of Hells Canyon Dam, the data from the Analysis of Cost Increases, Authorizations, and Benefits of Reclamation Projects, published by the Department of the Interior, Bureau of Reclamation, table 1, showing the changes in cost estimates which indicate that, contrary to the statement of the witness that Hungry Horse was built for less than it was originally estimated, the Bureau of Reclamation is on record as saying that it actually cost $9,400,000,000 more than it was originally estimated to cost.

I ask unanimous consent that it be put in the record.

Mr. HOISINGER. May I answer that, Congressman?

Mr. ASPINALL. Is there any objection?

Mr. METCALF. Reserving the right to object, and I am not going to object, I would like to have unanimous consent to put an answer in the record at this point.

Mr. ASPINALL. The Chair is a little embarrassed with so many reservations. But if there is no objection——

Mr. METCALF. I will withdraw my reservation.

Mr. ASPINALL. The request of the gentleman from Pennsylvania will be granted and your request, Mr. Metcalf, will be granted. It is so ordered.

(The documents referred to follow:)

HUNGRY HORSE

The following data is from Analysis of Cost Increases, Authorizations and Benefits of Reclamation Projects, Department of Interior, Bureau of Reclamation, March 1953, Table I, Changes in Project Cost Estimate (sheet 3 of 6):

PROJECT AUTHORIZED, 1944

Original Bureau of Reclamation estimate, 1945, 1,000,000 acre-feet storage, 142,000-kilowatt powerplant	$48,319,000

CONSTRUCTION STARTED 1947

Increased estimate, 1947, 3,500,000 acre-feet storage, 285,000-kilowatt powerplant	93,500,000
Increased fiscal year 1954 estimate	102,900,000
Increase in 1954 over 1947 estimate	9,400,000

(The $9,400,000 increase in cost over the 1947 estimate was in spite of savings of $6,410,000 due to changes in project plans and engineering modifications.)

Of the $9,400,000 increase in the estimate 1947–54, the report shows:

Due to—	
Inadequacies of estimates	$1,200,000
Unforeseen conditions	2,190,000
Total	3,390,000

STATEMENT OF CONGRESSMAN METCALF ON HUNGRY HORSE PROJECT

In order to answer criticism leveled at the Bureau of Reclamation relative to the accuracy of their estimates, it must be recognized that prior to answering such criticism that is based fundamentally upon the difference between the original and last official estimate, the element of price rise must be ruled out. For no agency, either public or private, can be held responsible for this element of cost over which they have no control. Much of the criticism of the accuracy of Bureau estimates falls in this category.

For example, I refer to the attempt, during the first session of these hearings Monday morning, to discredit Mr. Hoisington's testimony relative to constructing the Hungry Horse project within the original estimate. First, however, it should be pointed out that prior to authorization of the Hungry Horse Dam and powerplant in 1944, the Corps of Engineers, United States Army, conducted investigations relative to this project and submitted an interim report to Congress in March 1943. These findings have been published as House Document No. 643, 78th Congress, 2d session. The project was authorized by Congress as Public Law 329—78th Congress, chapter 234, 2d session, H. R. 3570, approved June 5, 1944. This law authorized the construction of Hungry Horse Dam (including facilities to generate electric power) to such height as may be necessary to impound not less than 1 million acre-feet of water. It further authorized the Secretary of the Interior to complete, as soon as the additional material is available, the construction of the Hungry Horse Dam so as to provide a storage reservoir of the maximum usable and feasible capacity.

There was no feasibility report or report of investigation prepared by the Bureau of Reclamation for Hungry Horse project prior to its authorization. Investigations prior to authorization, preliminary in nature, established the probability of a good dam site on the south fork of the Flathead River and the economic desirability of storage on this river. The main body of factual information that was available at the time of authorization was contained in House Document No. 643, mentioned earlier. Actually, as demonstrated by the language of the authorizing act, the sizes and capacities of the various project structures had not even been approximately determined at the time of authorization. Studies conducted since authorization indicated the desirability of constructing a reservoir with 3,500,000 acre-feet of capacity, which is considered the "maxmum usable and feasible capacity." Strictly speaking, the broad nature of the language of the authorizing act makes it impossible to state the cost estimate of the project as authorized; therefore, it can be said that the Hungry Horse project was authorized under no specific cost estimate. The original and first estimate made for the 3,500,000 acre-foot capacity reservoir and 285,000-kilowatt powerplant was made by the Bureau of Reclamation in 1947, based on April 1947 prices and totaled $93,500,000.

Current estimates for the Hungry Horse project, totaling $101,660,000, reflect increased prices that have accrued since April 1947. Contracts were let during 1948 for construction of the dam and powerplant and for the purchase of items of major equipment requiring long delivery time. The rise in prices since the original estimate was prepared amounts to approximately $10,420,000. Had the original estimate been revised to reflect price levels at the time construction started, the estimated project cost would have been $103,920,000. The project was built for less than the original cost estimate plus the element of price rise. Mr. Hoisington's statement that the Hungry Horse project was built within the original estimate is therefore correct.

Authority for the above costs are contained in the latest issue of Analysis of Cost Increases, Authorizations and Benefits of Reclamation Projects, dated October 1954.

Mr. ASPINALL. The gentleman from Arizona is recognized for a minute and three-quarters in spite of the quorum call that has just rung.

Mr. UDALL. I yield to the gentlewoman from Oregon.

Mrs. GREEN. I would like to give this time to Mr. Hoisington to answer that question. The statement that was made by the gentleman from Pennsylvania in regard to the cost.

Mr. HOISINGTON. I believe that Congressman Saylor is not taking into consideration price rise, which no man has any control over.

Mrs. GREEN. May I use the remainder of the minute and a half, Mr. Chairman, to explore the possibilities that this committee might need additional time in the 4 days which have been set up, assuming that all of the members of the committee are sincere in their statements they would like further time to study this very, very important project.

Mr. ASPINALL. May the Chair suggest to his colleague that she use the time between now and Wednesday morning trying to find out just how the people on the committee feel about that. There is not a quorum present this morning. The Chair hoped there would be a quorum present when we adjourned because he does not know whether to ask these witnesses to remain over to Wednesday morning or whether they should be excused.

What is the request?

Mrs. PFOST. Mr. Chairman, I realize, too, there is not a quorum present, but I do feel if these gentlemen could remain around there is a possibility the committee might have an extra hour or two at our disposal, and these technical witnesses might be granted permission to give valuable additional testimony or answer questions of the committee.

Mr. ASPINALL. The Chair would suggest, then, that the sponsors of the bills get in touch with the witnesses and see whether or not they may remain.

Mr. BUDGE. Mr. Chairman, these witnesses are here at the request of the chairman, are they not?

Mr. ASPINALL. They are here at the request of the chairman, but he wishes their journey back here to be as fruitful as possible.

Mr. BUDGE. I request the chairman see they are here. After all, he called the gentlemen.

Mr. ASPINALL. The committee is adjourned.

(Whereupon, at 12:08 p. m., the subcommittee adjourned to reconvene Wednesday, July 13, 1955.)

HELLS CANYON DAM

WEDNESDAY, JULY 13, 1955

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON IRRIGATION AND RECLAMATION OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to call, at 10:13 a. m., in the committee room, New House Office Building, Hon. Wayne N. Aspinall (chairman of the subcommittee) presiding.

Mr. ASPINALL. The Subcommittee on Irrigation and Reclamation will now be in session for the further consideration of H. R. 4719 and similar bills.

As I understand it, the sponsors of the legislation wish this morning to recall to the witness stand the technical witnesses who appeared here last Monday and use as much of this morning as is necessary for examination of those witnesses. Accordingly, the Chair calls to the stand Mr. Puls, Mr. Hoisington, Mr. Riter, Mr. Crandall, Mr. White, and Mr. Ostrander.

Off the record.

(Discussion off the record.)

Mr. ASPINALL. The Chair would like to have permission that those people from the area concerned who are here in Washington have permission to file their statements in the record with the understanding that they place such statements with the clerk this morning or not later than 3 o'clock this afternoon and the statements will not be admitted until tomorrow morning; is there any objection?

Mr. SAYLOR. Mr. Chairman, will there be just one copy presented?

Mr. ASPINALL. As I understand it, they have copies for everybody, and the clerk will try to get the copies to the different members as quickly as possible if the members request it.

Hearing no objection, it is so ordered.

May I say this to those of you who come from the area: We will attempt to give a few minutes to 1 or 2 of your spokesmen to make oral presentations as well.

With that understanding, the Chair recognizes the gentleman from California, Mr. Engle, if he has any questions.

Mr. ENGLE. Mr. Chairman, I desire to pass at this time and reserve any questions for later.

Mr. ASPINALL. The Chair recognizes the gentleman from Nebraska, Dr. Miller.

Dr. MILLER. I will pass and reserve any questions until later.

Mr. ASPINALL. The Chair recognizes the gentleman from New York, Mr. O'Brien.

Mr. O'BRIEN. I will reserve my time.

Mr. ASPINALL. The Chair recognizes the gentleman from Pennsylvania, Mr. Saylor.

QUESTION PERIOD OF L. G. PULS, C. I. HOISINGTON, J. R. RITER, LYNN CRANDALL, ELWYN L. WHITE, AND EARL D. OSTRANDER—Resumed

Mr. SAYLOR. Mr. Puls, will you refer to your statement, please? Attached to your statement is a drawing or exhibit identified by the number 550–26–27. That exhibit is substantially different from the exhibits which were presented to the House in the 82d Congress, substantially different from the plans which were presented in the Bureau's reclamation plans for the Columbia River which are referred to as the comprehensive Department report of the development of water resources of the Columbia River Basin, for review prior to submission to Congress, published by the Department of the Interior under Mr. Krug as Secretary and Mr. Straus as Commissioner.

Will you explain to the members of the committee the reasons for making the changes?

Mr. PULS. You referred, Congressman, to the number of an exhibit, and I do not at the moment know just what drawing you are referring to.

Mr. EDMONDSON. It appears at page 11 in your statement, immediately after page 11. Is that right?

Mr. SAYLOR. Yes.

Mr. PULS. I did not recognize the exhibit number, but this number here is identified in my testimony at 550–D–27. Is that the one?

Mr. SAYLOR. That is the one.

Mr. PULS. And the other one you referred to is the drawing of Hells Canyon Dam and project that was formerly submitted in the House?

Mr. SAYLOR. Correct.

Mr. Puls, I am not trying to put you on the spot. I will tell you the substantial differences as I looked at the plan. This one has only 2 tunnels or spillway tunnels, the other had 4 spillway tunnels. The plan which you have submitted indicates through its cross sections that the outlet pipes for your turbines will be located in the center of the dam. The others indicated that the powerhouses would be built on both sides of the dam. I would like to have you tell us why those changes were made.

Mr. PULS. Yes, sir; I will be very happy to.

I think that I have before me an earlier report that is the same one that you are referring to as the earlier design. It will be noted in the earlier design that we have a section similar to Hoover Dam. What I mean by "section," I mean a cross-section of the dam which is considerably wider, thicker through the dam than what we propose now. That, I presume, is one of the points that you refer to as the difference.

Mr. SAYLOR. That is correct.

Mr. PULS. That difference has come about through additional studies that we have made to obtain economy and a change of criteria that we have established in the Bureau that has been supported by tests and research in strengths of concrete and mixes and the raising of stresses allowable over what was allowed at Hoover Dam, and we are confident now and satisfied that we can accept those higher stresses, therefore reduce the quantity of concrete in the dam. That is the reason that the cross section was changed in that respect.

In regard to the powerplant, our first layout——

Mr. SAYLOR. Will you discuss first the 2 diversions, the reason for going to 2 diversion tunnels instead of 4?

Mr. PULS. As far as I can see, essentially we have 2 diversion tunnels in each of these plans. I do not know where you get the 4. There are 2 additional tunnels that feed the powerplant and feed the outlets, but we have 2 diversion tunnels in each plan—two 50-foot diameter diversion tunnels—that have their intakes upstream at the upstream cofferdam. If you have something else, I would like to see it.

Mr. SAYLOR. Mr. Puls, I may have been mistaken as to the diversion tunnels. The one—if you will come forward here, I will show you the one I have looked at on this plan and ask you to explain it, to identify it. It is marked "550–D–2." (There was a sidebar conference between Mr. Saylor and Mr. Puls.)

Mr. SISK. Mr. Chairman, is this discussion off the record?

Mr. SAYLOR. I just told him I would like him to explain it on the record.

Mr. PULS. Yes, Congressman, I will be happy to explain that.

In our initial design we had proposed 2 diversion tunnels and we have 2 diversion tunnels at the present time. There are, however, on the initial design 2 additional tunnels, making 4 altogether. However, the latter two I am referring to now are for the purpose of providing water passages to the powerplants. The design in our later drawing now proposed shows the powerplant with a different arrangement. In the early one we had 2 powerplants, 1 on each side of the river, and the units were fed through penstocks from each side by these other 2 tunnels that you referred to. Now we have rearranged that design through additional studies to locate the powerplant at the toe of the dam and the penstocks are embedded in the concrete dam and the intakes are all located on the upstream face, providing better operating conditions and obtaining additional economy.

Mr. SAYLOR. If it were necessary to install at a later date 4 or 5 additional units, where would they be installed under your new plan?

Mr. PULS. They could not be installed in line with the units as now laid out. However, another powerplant could be located on either side of the river parallel to the flow of the stream, but it would have to be fed by additional tunnels driven through the abutment and additional and new intakes created to the reservoirs.

Mr. SAYLOR. And if that were necessary to drive additional tunnels, to place additional units at a later date, what would be your present estimates of the cost of installing those additional units?

Mr. PULS. I have not that figure readily available to furnish you, Congressman, because it was apparent there was no necessity for making such a study. But I can, however, based upon some hypothetical condition, make such an estimate for you.

Mr. SAYLOR. No, then, is it your opinion that the outlet which you have designated on your plan 550–D–27 will carry all of the water that will come down the Snake River that can be used for the production of power?

Mr. PULS. I would like to suggest a little different phraseology of your question, sir. You say "outlet." In our language our outlets are for bypassing water and not as water passage for power. We have river outlets there to bypass water for a different purpose than power.

Mr. SAYLOR. Mr. Puls, I appreciate your correction because I am only counting on the outlets that you have installed for power as indicated on your new plan.

Mr. PULS. With that understanding, kindly, I would like to know what the question is.

Mr. SAYLOR. Is it your opinion that the outlets that you have provided for the production of power will carry all of the water which will come down the river and can be put to beneficial consumptive use for the production of power?

Mr. PULS. Yes, sir. That figure was furnished me, and the size of the water passages was designed, determined, to take care of the full amount of power water that was determined.

Mr. SAYLOR. The next questions I have are for Mr. Ostrander.

Mr. Chairman, I have a series of questions here to ask both Mr. Riter and Mr. Ostrander, but I do not want to take all of the time.

Mr. ASPINALL. Why do you not reserve the balance of your time?

Mr. SAYLOR. I certainly hope the type of questions I asked Mr. Puls as the first witness, indicates that I am not trying to delay this. This is information I am trying to get not only for my own benefit but for the benefit of the committee.

Mr. WESTLAND. Mr. Chairman, how much time do you figure as allocated to each member?

Mr. ASPINALL. Each side has 37½ minutes to begin with. The gentleman from Pennsylvania has used 14 minutes.

Mr. WESTLAND. It is divided by sides.

Mr. ASPINALL. The gentleman has now reserved.

Mr. SAYLOR. I will reserve now.

Mr. ASPINALL. The Chair recognizes the gentleman from Texas, Mr. Rogers.

Mr. ROGERS. Thank you, Mr. Chairman.

Gentlemen, I do not know which one of you can answer this question. I presume it should be directed to Mr. Riter. I do not want to oversimplify this problem. I know it is a sizable one. But, as I understand it, this gets down to the basic issue of which is the best course to pursue—the high dam or 1, 2, or 3 low dams—insofar as catching this water is concerned. Am I correct in that?

Mr. RITER. Mr. Congressman, all the testimony I presented before this committee concerns just the high dam. I felt those who were sponsoring the three-dam plan could probably adequately describe their plan.

I did submit before the Federal Power Commission a comparison report on the high Hells Canyon Dam with a 3-dam plan and also a 2-dam plan to develop the same reach of the river.

Mr. ROGERS. That is the point that I am getting to, Mr. Riter. The thing I would like to know as briefly as you could tell it to me and to the committee is this: What is the difference insofar as benefits are concerned between those 2 schools of thought, or the 2 different types of projects?

Mr. RITER. I can summarize it. I am reading from a report which I prepared on June 15, 1953, with an amendment on August 10, 1953, which I submitted before the Federal Power Commission.

According to this report, the high Hells Canyon Dam as of that time was estimated to cost $356,800,000. According to my report, I estimated that that would add to the system 900,000 kilowatts of prime

power, and that by the time you allowed for transmission losses and generation costs, the average cost of that power delivered at load centers would be 3.73 mills per kilowatt-hour.

I made a similar comparison for the 3-dam plan, which I estimated to cost—that is I with my colleagues—to cost $285,700,000. I estimated on the same basis that the 3-dam plan would add 610,000 prime kilowatts to the system, and that by the time you allowed for generation costs and transmission costs that would be 3.99 mills per kilowatt-hour.

In response to questions in the Federal Power Commission I testified that either plan was financially feasible.

Now, without trying to take the thunder away from the power company, they testified that their costs would be considerably less for the 3-dam plan than the $285,700,000 costs that I have testified to. I think there is your problem right there.

Mr. ROGERS. You say they testified it would be a great deal less?

Mr. RITER. Yes; their costs would be considerably less than the $285,700,000.

Mr. ROGERS. Would they construct the same type of project as you had in mind at the $285 million figure?

Mr. RITER. In making our estimates, this was what you might call a reconnaissance study and was based upon comparative costs. I explained the problem to our designers and to our estimators, and I told them that I wanted to make another comparison, I did not care what the answer was. I asked them to give me cost estimates which would be comparable to the cost estimate heretofore prepared for the Bureau, that is, the cost estimate for a 3-dam plan, and they furnished me this cost estimate of $285,700,000.

Mr. ROGERS. Did the opponents of the high dam, that is, the proponents of the low-dam structure, take the position that they could produce about the same amount of power as you proposed in your comparative figures to the Federal Power Commission?

Mr. RITER. I do not recall there was substantial difference between us on the power production.

Mr. ROGERS. As I recall your figures there, the three low dams would produce about two-thirds of the amount that would be produced by the high dam. Am I correct in that?

Mr. RITER. That is about it; yes, sir.

Mr. ROGERS. Let me ask you one more question, Mr. Riter, and then I will quit.

What is the cost of the high dam, that is, the one single high dam? What I mean by cost is this: You run into the situation sometimes, you know, when a man buys an automobile, and they give him one cost, and then when he gets the wheels to go on it, it is about twice as much as the cost was in the first place. What I want to know is, What is the final cost of the high dam when it is ready to operate?

Dr. MILLER. Including generating equipment also?

Mr. ROGERS. I mean the entire cost of what is proposed in the high-dam proposal.

Mr. RITER. So far as the estimates that are used in 1953, $356,800,000 provides for dam, reservoir, and powerplant of 800,000-kilowatt capacity. Of course, we testified here recently that the same structure, a high dam, a reservoir, and a powerplant of 800,000-kilowatt capacity would cost about $308 million.

Mr. BUDGE. Will the gentleman from Texas yield to me for a clarification of his question? It is a good question but should go one step further.

Mr. ROGERS. Let me ask one more question and then I will, Mr. Budge.

You said it would be around $308 million, the last figure?

Mr. RITER. That is our latest estimate for the same structure, the high dam with an 800,000-kilowatt powerplant.

Mr. ROGERS. Let me ask this one question and then I will yield to Mr. Budge: You spoke of both types of projects being financially feasible. Would there be any difference insofar as the physical feasibility insofar as the river is concerned and the general geography there? Which in your opinion would be the best?

Mr. RITER. Of course, on the basis of my own figures, since we would get more power out of the high dam, and since my figures indicate that the unit cost of power from either development, either the three-dam development or a single high-dam development, would be about the same, it would appeal to me on the basis of my own studies that the high-dam plan should be adopted, and that is the way I so testified before the Federal Power Commission.

Mr. ROGERS. You mean if the low-dam project is followed and you get into two-thirds of your potential production of power, then you have lost that other third forever?

Mr. RITER. That is the way my study shows; yes, sir.

Mrs. GREEN. Will the gentleman yield?

Mr. ROGERS. I promised to yield to Mr. Budge, and then I will.

Mr. BUDGE. I appreciate the courtesy of the gentleman from Texas. You asked the question as to the addition of power, and the answer was made as addition to the system.

I think that if you would ask Mr. Riter what else has to be built in order to get the addition to the system he talks about, you would have an entirely different figure than the one you got in your answer.

Mr. ROGERS. Of course, that is the thing I was getting at. I certainly do not want to hide any facts, and that is the reason I asked the question like I did and compared it to the automobile. What I would like to have is the final figure it is going to cost to get this thing in operation where you do not have a bunch of fringe matters that have to be taken care of and loose ends to gather up.

Mr. BUDGE. To get the benefits of the addition to the system that he talks about, what has to be expended? That is what you want to get at, I think.

Mr. RITER. Mr. Congressman, downstream from Hells Canyon there are presently operating two powerplants. One of them is the McNary, which I understand is not quite in full operation, and the Bonneville, which has been operating for a number of years. There is presently under construction the Dalles powerplant.

Now, in making my studies of power, I anticipated that the other authorized plants would be built. In other words, downstream in order, there is Lower Granite on the Snake River, there is Little Goose on the Snake River, there is Lower Monumental on the Snake River, there is Ice Harbor on the Snake River, and there is John Day on the Columbia River. Now these have already been authorized but not yet built. I do not have a cost figure on what the cost is for

building these additional plants. I did not anticipate in my studies they would all be built.

Then, in addition to that, there is a gross head of about 760 feet between the tail water elevation at Hells Canyon and the normal pool elevation at Lower Granite which is presently undeveloped. I anticipated in arriving at the figure of 900,000 that sometime before the end of the amortization period this remaining head would developed.

There are a number of alternative possibilities for developing that 760 feet of gross head, and I anticipated before the end of the 50-year amortization period that head would also be developed. I do not have the cost estimate for figuring that.

As I testified Monday, by reference to table 3 on page 10 of my testimony, I presented figures on the additional prime power that would be added to the system with a number of conditions there: One, with just the existing and under construction dam; two, with also the dams that have been authorized; and, three, with the full development of the head. I put it under a number of conditions for length of critical period. Those data are all presented on page 10.

Mr. BUDGE. Will the gentleman yield?

Mr. ROGERS. I promised to yield to Mrs. Green.

Mrs. GREEN. Thank you.

Would not the unit cost of the three-dam system be higher if you had not assumed there would be Federal financing at the same rate of interest in both cases?

Mr. RITER. I guess I should make that clear, Mrs. Green. In my comparison I assumed Federal financing for the plans I studied.

Mrs. GREEN. Then that would make a difference in the unit cost of the three-dam plan, they would be at least some higher?

Mr. RITER. I have not had too much experience in figuring the annual cost of power by private financing. All my experience has been in Federal financing.

What I was after there, I was trying to make an objective comparison. So I compared the plans all on the same basis of financing, namely, Federal financing.

Mrs. GREEN. Would the interest rates be the same; do you think?

Mr. RITER. From what I understand, the private financing would be at a higher cost.

Mrs. GREEN. And, therefore, it would raise the unit cost of the three-dam system?

Mr. RITER. Yes, I understand it would, assuming of course the same construction costs and everything.

Mrs. GREEN. Then, if I may ask one other question?

Mr. ROGERS. Yes.

Mrs. GREEN. Would the power production of the 3-dam plan have been less if you had not assumed those 3 dams would be operated in full integration with the Bonneville power system or the Columbia River system?

Mr. RITER. That would be true with any of the studies. I have tried to make my studies all on a comparable basis. I assumed Federal financing and assumed integrated operation of all plants.

Mrs. GREEN. But in the plans of the three low dams they do not plan an integrated system, they plan a coordinated system. Am I right? Would you explain to the committee the difference in the result as far as the prime power is concerned between the integrated

system which the high dam would have and the coordinated system which is advocated by the three-dam construction?

Mr. RITER. By coordinated system, integrated with the rest of the Federal system, your power production can be concentrated during the periods of low runoff on the entire system. For example, an energy production of, say, just for example, 5 billion kilowatt-hours per year. If you would produce that over an 8-month period, that would average about 850,000 prime kilowatts.

Now, on the other hand, if you did not coordinate with the other Federal system, in other words, if you tried to produce your power on a 12-month basis, then if your plant would produce, say still, 5 billion kilowatt-hours a year, you spread that over a 12-month basis instead of, say, 8-month basis, and that would be about 570,000 prime kilowatts. So that is the difference with coordination.

Mrs. GREEN. Then there would not be as much downstream firm power from the three-dam plants as the figures might indicate because of that very factor. Is that not right?

Mr. RITER. If they were not coordinated, they would be less; yes, ma'am.

Mrs. GREEN. And the three-dam plan does not plan on an integrated system?

Mr. RITER. I suggest it might be well to direct that question to the power company if they testify.

Mrs. GREEN. In the Federal Power Commission testimony, was not that the testimony there?

Mr. RITER. There were so many figures there I just do not recall whether the power company was proposing to operate independently or proposing to coordinate. I know in the studies I made, Mrs. Green, in which I was trying to compare this same reach of river, I assumed for purposes of comparison it would be coordinated.

Mrs. GREEN. Mr. Chairman, it seems to me the testimony of the hearings before the Federal Power Commission are extremely valuable, not only to this committee but to anyone who is concerned about the Hells Canyon problem. Therefore, I would ask unanimous consent that the testimony of the hearings before the Federal Power Commission be made a part of the record by reference so we do not have printing costs.

Mr. ASPINALL. The Chair would have to object to the request of the lady and would suggest that the testimony in the power hearings, as such, be made a part of the files so that any member who wishes to can go to the file and get the hearings. The request the lady makes is just a little bit too laborious in what might be required of our staff, Mrs. Green.

Mrs. GREEN. I do not know whether I made myself clear. I did not want it printed, only by reference.

Mr. ASPINALL. It will be by reference if it is in the file.

Mrs. GREEN. All right.

Mr. ASPINALL. Unless there is objection, it is so ordered.

Hearing no objection, it is so ordered.

The gentleman from Texas, Mr. Rogers, has consumed 17 minutes.

Mr. ROGERS. I will yield the floor.

Mr. ASPINALL. The Chair recognizes the gentleman from Washington, Mr. Westland.

Mr. WESTLAND. I will reserve my time.

Mr. ASPINALL. The Chair recognizes the gentlewoman from Idaho, Mrs. Pfost.

Mrs. PFOST. Mr. Chairman, I would like to ask Mr. Crandall if you believe that the addition of approximately 1.3 million acres of new upstream irrigation will greatly affect the 50-year payout period of the high Hells Canyon project—whether it will interfere with or prevent the high-dam reservoir from efficient and economic operation for the creation of maximum amounts of power.

Mr. CRANDALL. That is somewhat an involved question, Mrs. Pfost. I think the effect of the upstream irrigation has been overemphasized. The amounts of depletion on an average during the pay-out period, as I have calculated them, amount to around 13 percent of the historic annual flows of the river on an average. So that on an average it would be a depletion of that amount. A large amount of the depletion, however, takes place in high-water years and high-water periods when the water would otherwise run to waste, because it is then being stored in reservoirs now built and that will be built upstream on the upper portions of the Snake River. Then in the dry years, in the dry periods of years, that reservoir water which otherwise would have run to waste is poured out on the lands. So that the depletion downstream during the short-water periods is what you are principally concerned with in power production and would be less than during high-water years. In other words, the effect of additional storage is to increase the flow during low-water periods and decrease the flow during high-water periods.

During recent years we have had this new development by pumping from ground water, which is something new in the area, and in that respect that makes a demand on low-water flow itself.

Sizing all those things up, I think that the remaining water supply will be adequate for successful operation of the high Hells Canyon project.

Mrs. PFOST. Of course, Mr. Crandall, you and I realize that the irrigation water in Idaho is the very lifeblood of the economy of our State. I know that you, with your some 50 years of experience in Idaho irrigation, are just as interested as I am in preserving and protecting all irrigation rights for the benefit of farm production in our State. For the record we need to have your great reservoir of knowledge as to how future upstream irrigation development will affect the operation of the high Hells Canyon Dam. Is it your opinion then, that in view of additional land being brought under irrigation upstream, that there will still be sufficient water to successfully operate the high Hells Canyon Dam?

Mr. CRANDALL. That is my opinion. There is a flexibility in the operation of the reservoir itself that is not generally appreciated. We speak of it as a storage reservoir, but essentially it is a dam to create a power head, and the drawing of some storage out of it at times to make a more efficient use of the water for power production at a time when it is most needed is just an operating procedure.

You might go through phases of this development when you would draw out an average of 2 million acre-feet a year; you might later drop into a period when you would only draw 1 million acre-feet a year. It is conceivable that at some future date when the upstream reservoirs are all built that are feasible that the river might have a flow which would not exceed during a low year the amount of water that would be carried through the turbines; and if you had a demand

for power throughout the year at that time, in some later period you could under such circumstances get the maximum production by taking the flow of the river from time to time. In other words, you would not lose any of the water, any of the head by drawing on storage. You would run every acre-foot of water through the plant at maximum head as long as your river flow is less than 20,000 second-feet or so capacity of the water wheels. So that you will adjust in your operations whatever fluctuations there might be in the water supply either from wet to dry years or from upstream years. You will adjust your operation of the reservoir to that along with your power demands to get the best production out of the thing that can be made.

Mrs. PFOST. Mr. Crandall, I believe the first Snake River measurements in Idaho were taken about 1911, were they not?

Mr. CRANDALL. It started in the year 1910 at Weiser, and some years later a station was established down at Oxbow, which is just above the Hells Canyon site.

Mrs. PFOST. I would like to ask then, Mr. Crandall, has there been any appreciable amount of decrease in the flow of Snake River since those first records were made?

Mr. CRANDALL. There has been some on an average. However, the highest year in the entire 43 years occurred in 1952. The year of highest runoff was in 1952 when there was a flow of 20 million acre-feet past the Oxbow station. I would say that if you took the last 10 or 15 years the average flow would be somewhat less than it was during the first 10 or 15 years. There has been a million and a quarter acres of land go into cultivation during that period, and that has probably consumed from 1½ to 2 million acre-feet of water.

Mrs. PFOST. Is it not true, Mr. Crandall, that most of the inflow of the Snake River comes at Thousand Springs and below?

Will you please explain to the committee why the great flow of water at the Hells Canyon point of Snake River originates at Thousand Springs and below.

Mr. CRANDALL. The water originates originally in the mountains, largely up in Wyoming, comes into Idaho, and then in what we call the upper valley——

Mrs. PFOST. Just one moment, Mr. Crandall. One of the committee members has just asked where Thousand Springs is.

The reason I am propounding this question is the fact that we have heard much about the irrigation upstream depleting the flow of the river until there would not be sufficient water to fill the high dam.

Of course, you have just heard Mr. Crandall say there would be sufficient water to successfully operate the high dam in spite of additional irrigation being brought in.

The majority of the upper Snake irrigation is above King Hill.

For that reason, Mr. Crandall, you may supplement the statement I have just made and explain so the committee will understand.

Dr. MILLER. Is that Mountain Home?

Mrs. PFOST. King Hill is just a few miles upstream from Mountain Home.

Dr. MILLER. Then does the bill contemplate irrigation at Mountain Home?

Mrs. PFOST. The Mountain Home irrigation project would come out of one of the tributaries to the Snake.

Mr. CRANDALL. The water arises originally mostly in Wyoming, comes down into Idaho into what is called the upper valley of the Snake River, and the canals in that section divert out in an average year around 7 million acre-feet of water which they pour out into the valley lands on the Snake River plains. The crops consume something less than perhaps about 2 million acre-feet of that and it goes off into the air, and the remainder of that sinks to the ground-water level and drains back into the river below the points of diversion of these upper canal systems.

In that section of the river between Milner and King Hill the flow now is 50 percent greater in the low-water periods than it was 40 years ago. So that has been a very beneficial effect on the streamflow, that upstream irrigation.

In dry years we discharge practically no water past Milner except a very small amount that the Idaho Power Co. is entitled to draw under some of its rights; and yet, with no discharge at all past Milner in these years during the early thirties to speak of, we had flows at Hells Canyon of from 8 to 10 million acre-feet which came in mostly as return flow.

A similar situation exists in the Boise Valley. There is a large return flow from the Boise Valley that goes into the Snake also.

There is this great inflow from underground waters and some tributaries that makes up the bulk of the flow at Hells Canyon during the low-water years.

Mrs. PFOST. In other words then, Mr. Crandall, the additional irrigation or the present irrigation east of King Hill would have little effect upon the flow of water in Hells Canyon?

Mr. CRANDALL. There is some pumping going on out of this ground-water flow itself which will have some effect in depleting it in this area of which you speak. However, there is now under construction the Palisades Reservoir which will store and make available something like 1,200,000 acre-feet of storage. And other reservoirs are under investigation upstream. Those are reservoirs which will be built as insurance reservoirs to store water in the wet years and will be poured out on the land in the dry years, thereby making a further contribution to the ground-water flows that has not existed in the past. So that the effect of those new reservoirs will offset, to some extent at least, the increased depletion due to pumping from the ground water.

Mrs. PFOST. Thank you very much, Mr. Crandall.

I am looking at the clock, Mr. Chairman. There are other questions I would like to ask but I will defer to my colleagues who no doubt have many questions.

Mr. ASPINALL. The Chair recognizes the gentleman from New York, Mr. Pillion.

Mr. PILLION. Mr. Ostrander, if this were a privately owned, privately operated plant, it of course would pay taxes to either the State of Idaho or the State of Oregon. Assuming a cost of $350 million, and assuming an assessed valuation, say, of about 30 percent, which would make it about $100 million, and assuming a real-estate tax of $30 per thousand, the real-estate tax then, if it were privately owned, would run about $3 million per year payable either to the State of Idaho or the State of Oregon. This project then would amount to a subsidy on the part of the taxpayers of Idaho or Oregon to the extent of about that amount per year, would it not?

In other words, they are completely relieved of paying local taxes and paying State real-estate taxes.

Mr. OSTRANDER. I am not sure how you are defining subsidy or what you mean by it, Mr. Congressman. Your arithmetic is correct. I will agree to that.

Mr. PILLION. It escapes that amount of taxes that would be received by the localities or the States of Idaho and Oregon as compared to a privately operated industry; is that not right?

Mr. OSTRANDER. There will be that difference.

Mr. PILLION. Yes. Private industries in the State of Idaho also pay a tax per kilowatt-hour, do they not?

Mr. OSTRANDER. On their sales?

Mr. PILLION. Yes.

Mr. OSTRANDER. I am not sure, sir. Perhaps they do.

Mr. PILLION. If they do, then of course the State of Idaho would be deprived of that tax as compared to a private utility; is that correct?

Mr. OSTRANDER. That may not follow. If the tax by the State of Idaho is on the kilowatt-hours sold to ultimate consumers, then the source of the power supply would not affect that tax whether it was a Federal source or a non-Federal source; as long as the power was being sold at wholesale by the Federal Government to the distributor, there would be still the same tax.

Mr. PILLION. Do you know as a matter of fact whether or not the State of Idaho will collect any kilowatt-hour tax?

Mr. OSTRANDER. I do not know what their tax is. I believe you suggested there was a sales tax.

Mr. PILLION. Yes.

Mr. OSTRANDER. If that is true, I do not think it would be affected.

Mr. PILLION. If there is a State corporation income tax, then the States of Oregon and Idaho would be subsidizing, or at least not receiving the taxes that would be paid by a comparable private utility, and in that way by relieving the users and the irrigators of that tax, the taxpayers at large of the States of Idaho and Oregon would be contributing then, in effect, to the electricity consumers and to the irrigators. Is that correct?

Mr. OSTRANDER. The States, of course, might actually, if you develop a large block of low-cost power—if you did that, then it might develop industries such as they would be better off taxwise.

Mr. PILLION. I am not talking about indirect benefits or indirect hypothetical speculations; I am talking about the taxes themselves. I do not want to get off into intangible things as many of the Bureaus like to get into. I would like to confine ourselves to the question.

Mr. OSTRANDER. Of course, as you say, if this were a Federal project, it would not be subject to the State corporation taxes.

Mr. PILLION. Mr. Ostrander, do you know that within the past week the United States Treasury announced the sale of a very small block of United States bonds, 40-year bonds, at a rate of 3 percent?

Mr. OSTRANDER. No, I have not noticed that.

Mr. PILLION. Would you say that the United States Government would have a difficult time in selling to the public 40-year bonds at 3 percent in large blocks, and this offering was merely a test offering that the credit of the United States is such that it makes it very diffi-

cult for it to sell long-term bonds, such as 40-year bonds? Do you know that?

Mr. OSTRANDER. No, I do not. I do notice that the presently outstanding long-term United States 3-percent bonds are just something slightly above par, which would indicate a yield to the investor of slightly under 3 percent.

Mr. PILLION. If the United States Government is having difficulty—I repeat—having difficulty, its credit is such that it has difficulty in selling long-term bonds at 30 or 40 years at 3 percent—your estimate here, your financial estimates are all based upon a 2½-percent interest rate. Is that right

Mr. OSTRANDER. That is correct.

Mr. PILLION. And assuming that 3 percent is the proper rate instead of 2½ percent, then all your figures are off by at least 20 percent; is that correct? 20 percent of the 2.5 percent, when the present interest rate on bonds of this type would be 3 percent.

Mr. OSTRANDER. I am sorry, sir, but an increase in the rate from 2.5 percent to 3 percent would not make a 20-percent difference, of course, for mathematical reasons.

Mr. PILLION. Is not the difference between 2.5 and 3 percent one-half percent? Is not one-half percent 20 percent of 2.5 percent?

Mr. OSTRANDER. The arithmetic is correct on that, sir, but that still does not affect the overall costs by 20 percent because of the amortization features.

Mr. PILLION. Would not the 3-percent rate, of necessity, increase the estimated cost of power, which is estimated by the committee staff at 3.79 mills per kilowatt—would not a figure of 3 percent substantially increase that rate?

Mr. OSTRANDER. It would increase it something less than 20 percent. Maybe 15.

Mr. PILLION. When you take the maintenance and operation out, in fact, would it not increase it more than 20 percent?

Mr. OSTRANDER. No, sir.

Mr. PILLION. I will yield back the balance of my time.

Mr. ASPINALL. The Chair recognizes the gentleman from Florida, Mr. Haley.

Mr. HALEY. Could I inquire as to how much time is remaining on this side?

Mr. ASPINALL. 6½ minutes.

Mr. HALEY. I reserve my time.

Mr. ASPINALL. The Chair recognizes the gentleman from Idaho, Mr. Budge.

Mr. BUDGE. Mr. Crandall, so there will not be any wrong impression created, I noticed the last time you testified before the Senate committee that the press said your comment was there was plenty of water to operate the high Hells Canyon Dam. In reading your testimony, it seemed to me that you limited your statement to operating the high Hells Canyon Dam in accordance with the plan outlined by Mr. Riter. Is that correct?

Mr. CRANDALL. Yes. My testimony was that Mr. Riter's report showed that he would operate in the early years by a draft of 2,300,000 acre-feet per year, that later that would drop to 1 million acre-feet per year, and maybe occasionally in some dry year it might be neces-

sary to draw out the full 3,800,000 acre-feet. My testimony was that under those conditions I felt the water supply would be adequate.

Mr. BUDGE. Generally speaking, as the payout period progresses, according to Mr. Riter's testimony, the usual draft will be in the neighborhood of a million acre-feet. That is what you are saying—that the water is sufficient to operate in accordance with that plan. Is that not right?

Mr. CRANDALL. Yes. The reason for using a million acre-feet is not entirely a matter of water supply. As you get more complete development of the hydroplants on the Columbia River and as you get steam plants and you get storage on the Clearwater and on the Columbia and its tributaries, it works out eventually that just as a matter of getting the greatest production it pays you to hold the head up pretty well at Hells Canyon rather than to sacrifice the head there for the sake of storage. So those two factors work to decrease the amount of storage use of the reservoir as the years go on.

Mr. BUDGE. Actually, as the years go on the storage becomes less valuable as such, does it not?

Mr. CRANDALL. I think you could probably continue beyond the payout period with the use of a million acre-feet of storage. That only involves a loss of head on the high dam of 40 feet, which is about 7 percent. And I believe that you would get enough use out of that additional million acre-feet to justify the loss of that small percent of the head.

Mr. BUDGE. One of the dams proposed by the Idaho Power Co., the Brownlee Dam, has a million acre-feet of storage in it; does it not?

Mr. CRANDALL. It has a million acre-feet, but because it is a smaller reservoir, to get out that million acre-feet you lose a hundred feet of head at Brownlee, where you only lose 40 feet of head in the high dam.

Mr. BUDGE. That would be perhaps for power purposes. I am not an expert on that. We are talking about the water now.

Mr. CRANDALL. The volume of water would be the same.

Mr. BUDGE. When we are talking about the water coming from upstream, we are talking basically about a million acre-feet of storage to be used so far as the water upstream is concerned, not the production of power. Is that correct?

Mr. CRANDALL. Yes.

Mr. BUDGE. If you had your choice between the storage of water on the Snake River, would you prefer to store it over here [indicating] above the Palisades project or would you prefer to store it downstream someplace such as at Hells Canyon?

Mr. CRANDALL. I am very much in favor of storing all that is available on the headwaters of the stream. I would dry the river up at Milner by upstream storage to as great an extent as possible. But even after you have done that and independent of that, you still have 8 to 10 million acre-feet inflow below that point.

Mr. BUDGE. Yes, but if you had a choice for financial reasons or otherwise, between the storage at the two places, which would you chose?

Mr. CRANDALL. If you were limited by finances so that you could not build both the upstream storage and the Hells Canyon, as a resident of the Snake River Valley, I would be in favor of building the upstream reservoirs first. But, of course, you have got other States'

views that have to be considered. You cannot take all the money in the Northwest and spend it on the upper reaches of the Snake River.

Mr. BUDGE. In that connection, I would like to refer to the report furnished by the Secretary of the Interior on this bill to the Senate committee on May 2, in which he says that these other projects downstream, in order to get this addition to the Bonneville system—the sentence is this:

> The six remaining authorized dams (John Day, Priest Rapids, Ice Harbor, the Lower Monumental, Little Goose, and Lower Granite) have not as yet reached the construction stage. These 6 dams have an estimated cost of over $1,211 million.

If you add Hells Canyon to that and other projects in Oregon and Washington, you can see——

Dr. MILLER. Will the gentleman yield?

Mr. BUDGE. Yes.

Dr. MILLER. Do I understand they have to be built first before Hells Canyon could be made effective?

Mr. BUDGE. They would have to be built in order to get the benefits to the system which have been claimed. The storage at Hells Canyon is intended for the operation of the downstream plants. In addition to this, you have to put in new generators at the existing plants downstream.

Dr. MILLER. In other words, before the benefits that are claimed under this bill can be realized, the others have to be completed?

Mr. BUDGE. That is correct.

Mrs. PFOST. Mr. Chairman. Will the gentleman from Idaho yield for a question at that point?

Mr. BUDGE. I yield.

Mrs. PFOST. For the clarification of the committee, could we get into the record at this point the benefits Hells Canyon would provide to the Columbia River system as it exists today, excluding those projects in the planning stage and those which have been authorized but no construction started.

Mr. BUDGE. That is set forth in Mr. Riter's statement.

Mrs. PFOST. I realize that.

Dr. MILLER. Will the gentleman yield?

Mr. BUDGE. Yes.

Dr. MILLER. In the report just received from the Department of the Interior there is some talk about irrigation benefits. They say in the second paragraph:

> However, H. R. 4719 would not, in and of itself, authorize the construction of any irrigation works for the Mountain Home area or any other area. It is also pertinent to observe that the Hells Canyon Dam contemplated by H. R. 4719 would not deliver water to, or otherwise serve as a physical part of, the proposed Mountain Home development or any other irrigation development.

I was under the impression there were many benefits to be derived by irrigation, but apparently this letter states there is no benefit. Is that the understanding of the gentleman, Mr. Crandall, when he testified?

This letter was just received by the committee from the Assistant Secretary.

Mr. CRANDALL. I am an engineer in the Interior Department. I am not going to question any statement in the letter you have received from that Department.

Dr. MILLER. You have been saying, as I understand, there is some benefit to irrigation.

Mr. CRANDALL. That is two different things. What you are talking about is a benefit from this project for the purposes of aiding irrigation. Now that is one thing, and the matter to which I was testifying was that in the past the use of water for irrigation upstream had considerably increased the low-water flow of the river, which was a benefit to the powerplant.

Those are two separate matters.

Mr. BUDGE. Mr. Crandall, what Dr. Miller is getting at: There is no irrigation from the reservoir to be created by the Hells Canyon dam?

Mr. CRANDALL. No.

Mr. BUDGE. And there is no irrigation for any place in this bill, is there?

Mr. CRANDALL. No. There have been proposals in the past that certain earnings out of the Hells Canyon plant after it paid for itself would be used to subsidize upstream irrigation, but I do not understand that is definitely provided in this bill at all.

Mr. BUDGE. No, it is not.

Incidentally, jumping to Mr. White, what is the latest cost for irrigating under the Bureau plan for irrigation of the Mountain Home Desert, to which there is some reference in this bill? What is your cost per acre to irrigate it?

Mr. WHITE. Congressman, we have studied a plan that would irrigate a part of the Mountain Home Desert——

Mr. BUDGE. Just a minute. At the Senate hearings you said you did not know the answer to that question and later supplied for the record the figure of $1,202 per acre.

Mr. WHITE. Yes, sir.

Mr. BUDGE. Is that a correct figure?

Mr. WHITE. What is the figure?

Mr. BUDGE. $1,202 per acre.

Mr. WHITE. That is not the latest, no.

Mr. BUDGE. That is the one you furnished to the Senate less than a month ago.

Mr. WHITE. I furnished some other figures, too, I believe. The latest plan we have studied for the Mountain Home Desert would irrigate 104,000 acres, as I recall——

Mr. BUDGE. That is the Sloan plan.

We are going to get into that tomorrow. But you do not question this $1,202 figure you put in the Senate hearings, do you?

Mr. WHITE. No. That was for the Payette diversion plan that was reported on in 1948.

Mr. BUDGE. Mr. Riter, will you repeat for me the figures that you had as to kilowatt costs between this proposal and the private power company proposal?

Mr. RITER. The one I gave in response to a question of the gentleman——

Mr. BUDGE. The gentleman from Texas.

Mr. RITER. Yes. These are unit costs per kilowatt-hour. This is based on the report of June 1953 as amended on August 1953.

With the high Hells Canyon plan, I estimated that the unit cost of power delivered at load center is 3.73 mills per kilowatt-hour. For

the 3-dam plan, the way I studied it, it was 3.99 mills per kilowatt-hour.

Mr. BUDGE. That is 3.73 for this proposal and 3.99 under the 3-dam plan, based upon your estimate of the 3-dam cost of $285 million?

Mr. RITER. $285,700,000; yes, sir.

Mr. BUDGE. If the cost of the 3-dam plan goes down substantially, your figure there, of course, would go down, would it not?

Mr. RITER. Yes. But, of course, you want to remember I am making comparisons of plans, and I felt it would be necessary to be comparable that I should have the same group of engineers give me an estimate for the 3-dam plan as supplied me with the estimate 1-dam plan.

Mr. BUDGE. Are you familiar with the Morrison-Knudson Co. of Boise, Idaho?

Mr. RITER. Yes.

Mr. BUDGE. What is their history with regard to the construction of hydroelectric projects?

Mr. RITER. They have frequently bid on some of our jobs.

Mr. BUDGE. As a matter of fact, they have built quite a few of them?

Mr. RITER. Yes.

Mr. BUDGE. Of the largest ones you have.

Mr. RITER. Yes, sir, sometimes in combination with other companies.

Mr. BUDGE. Did you not hear when you were in the Senate hearings and in the Federal Power Commission hearings that Morrison-Knudson Co., which is one of the largest general contractors in the world, had made a firm commitment to build these three dams for $133 million?

Mr. RITER. I have heard rumors to the effect that is what they offered to do. But, Mr. Budge, I have to rely on our engineers in our office, in whom I have confidence, to make estimates on a comparable basis.

Mr. BUDGE. If we just assume that Morrison-Knudson Co., which is a multi-million-dollar company—if we just assume they will build these 3 dams for $133 million, then what do you figure out per kilowatt-hour is the cost of the 3-dam plan?

Mr. RITER. I have made no figures on that basis.

Mr. ROGERS. Will the gentleman yield right there?

Mr. BUDGE. Yes.

Mr. ROGERS. Which three dams is it they are going to build for $133 million? What I am talking about, Mr. Riter, is this: What are the specifications of those three dams? We may be talking about two different things.

The reason I point that up is this: That we have that same argument on the Canadian River in Texas, and a group came in and said they were going to build for less and advertised that all over, and all they were going to do was just cut the capacity in half.

Mr. ASPINALL. The time of the gentlemen on my right has expired. The gentlewomen and the gentlemen on my left have 6½ minutes remaining. At the end of that time I would make this request of the committee—that the remaining time this morning be divided between Mrs. Pfost and Mr. Budge to use and yield as they see fit.

Is there any objection?

Hearing no objection, it is so ordered.

At this time the Chair recognizes the gentleman from Oklahoma, Mr. Edmondson.

Mr. EDMONDSON. Mr. Chairman, I wonder if I might yield to the gentlewoman from Oregon for such questions as she might have.

Mr. ASPINALL. The Chair would suggest we will get to the gentlewoman either now as we go down the line or when we come back.

Mr. EDMONDSON. I have no questions.

Mr. ASPINALL. The Chair recognizes the gentleman from California, Mr. Sisk.

Mr. SISK. No questions, Mr. Chairman.

Mr. ASPINALL. The gentleman from Texas, Mr. Rutherford.

Mr. RUTHERFORD. No questions.

Mr. ASPINALL. Now the gentlewoman from Oregon.

Mrs. GREEN. Mr. Ostrander, will you tell the committee if the Bonneville Power Administration is meeting now the pay-out requirements of the various projects and transmission line networks in the Federal Columbia River power system?

Mr. OSTRANDER. Yes, it is.

Mrs. GREEN. Is it ahead of schedule?

Mr. OSTRANDER. On the Bonneville Dam and the Bonneville Power Administration the repayment is ahead of schedule.

Mrs. GREEN. To about what amount? Is it about $65 million?

Mr. OSTRANDER. As of June 30, 1954, about roughly $55 million on BPA and $10 million on Bonneville Dam, a total of $65 million.

Mrs. GREEN. Is it also true they have paid a total of about $80 million to the Federal Government in interest?

Mr. OSTRANDER. I believe somewhat more than that. I can get you——

Mrs. GREEN. That is close enough.

Will the addition of Hells Canyon to the present system of existing dams or the ones under construction have any effect upon the going Bonneville power rate?

Mr. OSTRANDER. I would not like to answer that in terms going Bonneville power rate. The burden of my comparison, Mrs. Green, was that the addition of Hells Canyon project to either the present system or some larger future system, as I studied it, would not adversely affect the rates otherwise required.

Now the system now under construction or the larger system contemplated without Hells Canyon may require some increase over our present rate, but the addition of Hells Canyon on top of that would not adversely affect that.

Mrs. GREEN. It would keep the rates as they are or lower?

Mr. OSTRANDER. Just about stable.

The essence of my comparison is that the increment added by Hells Canyon is about at the average system costs.

Mrs. GREEN. How much relationship do you think there is in the Pacific Northwest between the shortage of power, which everybody recognizes, or the shortage we will have by 1960, and the low rate?

Mr. OSTRANDER. That is an extremely difficult question to answer, Mrs. Green.

Mrs. GREEN. Is not there a definite relationship between the demand for power and the costs they are going to have to pay?

Mr. OSTRANDER. It is true that if you can distribute power at very low costs you do encourage a great increase in the use of power. In the home, for example, you will get electric cooking, or an electric water heater. In fact, we have some electric space heating out there.

Mrs. GREEN. Would not the lower rates invite new industries?

Mr. OSTRANDER. The large electrochemical industries for which electric power is an important part of their total manufacturing costs are attracted, of course, to an area where there is low-cost power. That causes a demand for power wherever you do have a low-cost area.

Mrs. GREEN. A moment ago mention was made of the taxes which the Idaho Power Co. would pay into the Federal and State Governments if they build a three-dam plant. Would you enlarge upon the thing you started to enlarge upon a moment ago, that by having the low rates and inviting industry into the area there is a chance of having greater taxes.

Mr. OSTRANDER. According to the information available to us, the large industries that have located in the Pacific Northwest, and which in my opinion have located there because of the availability of large blocks of very low-cost power, pay substantial amounts of taxes.

For example, it is stated that in Spokane County, Wash., the large industries there that are using Bonneville power pay more taxes to the county than all the railroads and utilities in the county pay to the county.

We know also that in the Vancouver, Wash., area, where the Aluminum Company of America has a large plant, there are substantial taxpayments. It filters all through the economy out there.

The studies indicate there is substantial employment provided by these plants. So it does affect the whole economy, in my opinion.

Mrs. GREEN. Thank you.

Mr. Puls, would you, from your study of the Idaho Power Co.'s plan and engineering studies of the Brownlee site and drill core records—would you assume this site would show different problems of construction which might increase your costs?

Mr. PULS. This is the Brownlee site?

Mrs. GREEN. Yes.

Mr. PULS. We have made design studies of the Brownlee site. One was a concrete dam and the other was a combination of rock and impervious core, and——

Mr. ASPINALL. The time of the gentlewoman from Oregon has expired. The Chair recognizes the gentlewoman from Idaho, Mrs. Pfost, for 14½ minutes.

Mrs. PFOST. Mr. Chairman, I would like to address one question to Mr. Crandall.

Mr. Crandall, would you say from your experience as water master of the Snake River for many years that the Idaho Power Co. now has a substantial proportion of the Snake River flow tied up between American Falls and the Hells Canyon stretch of the river?

Mr. CRANDALL. They have a number of powerplants along that section of the river, and they have rights which they have acquired under the State laws, water filings on the flow of the stream at those power sites.

Mrs. PFOST. Could you enumerate for the committee's benefit how many dams they have at present in the river and name them?

Mr. CRANDALL. The last irrigation diversions are at Milner; and you proceed down the river from Milner and you come to their first plant at Twin Falls, where there is a natural falls in the river. Then their next plant is at Shoshone Falls where there is another falls. And I believe they have several plants downstream from there in what is called Hagerman Valley at the upper and lower Salmon Falls sites, and a site at the mouth of the Malad River, and a site near Bliss, and the C. J. Strike plant out north of Mountain Home. Then I believe they have one other plant at least below that. I do not recall the name of that, south of Nampa somewheres.

Mrs. PFOST. Thank you very much.

Mr. Riter, will you please state for the committee's benefit the amount of kilowatt-hours the high Hells Canyon Dam will provide to present dams, plus those that are under construction, excluding from that figure any projects that have been authorized but on which no construction has been started?

Mr. RITER. I have that figure readily available in terms of prime kilowatts. Would that be satisfactory?

Mrs. PFOST. Prime kilowatts would be satisfactory.

Mr. BUDGE. Let's have it in total generation. That is what we use.

Mrs. PFOST. Yes. Thank you.

Mr. RITER. I could convert that. It is 129,000 prime kilowatts. That is spread over an 8-month period. So I would have to convert that.

Mrs. PFOST. Mr. Riter, I would like you to include high Hells Canyon Dam in that figure, of course.

Mr. RITER. 129,000 prime kilowatts is just the increase to downstream sites.

Mrs. PFOST. All right.

Mr. RITER. If I add 710,000 kilowatts, my estimate of production at Hells Canyon, it makes a total of 839,000 prime kilowatts. Then I multiply that by 8 because there is 8 months, and then multiply by 730 because there are 730 hours in a month on the average.

Mrs. PFOST. Do you not have it for the 12-month figure, the year around?

Mr. RITER. No, ma'am. In the operations I only figured the low period. I do not have the figures readily available for the other 4 months. They would be very low, however.

Mrs. PFOST. Then what would be produced including the three Idaho Power Co. dams and the downstream existing facilities and those under construction?

Mr. RITER. If you would prefer saving time, I could supply that figure for the record. I have it available, but I will have to dig it out of the old report. Will that be satisfactory?

Mrs. PFOST. Will it take only a few moments?

Mr. RITER. It will take a little while to dig out, but I will supply it for the record if that will be satisfactory.

Mrs. PFOST. All right.

Mr. ASPINALL. Just a minute. As I understand it, you gentlemen will be before this committee tomorrow when the opponents take charge of the time. You will have it at that time?

Mr. RITER. Yes.

(COMMITTEE NOTE.—The information requested follows:)

On July 13 Mrs. Pfost requested information on the relative amounts of power that would be available with (*a*) the high Hells Canyon Dam and (*b*) the three-dam plan in the Hells Canyon area added to the existing (presently operating or under construction) power system.

Assuming coordinated operation with the existing system, the amounts of prime power added to the system are estimated to be as follows:

[In kilowatts]

	High dam plan	Three-dam plan
At site generation	710,000	558,000
Increase downstream	129,000	33,000
Total	839,000	591,000

NOTE.—Based on 8-month critical period September 1936 to April 1937 inclusive, which determines system prime power production.

With production during the flood season supplied from the system, the equivalent annual amounts of prime energy generation added to the system would be:

	Million kilowatt-hours
With high-dam plan	7,350
With three-dam plan	5,177

Mrs. PFOST. Mr. Chairman, I would like to yield the balance of my time to my colleague from Oregon, Mrs. Green.

Mr. ASPINALL. The gentlewoman from Oregon has 9 minutes.

Mrs. GREEN. I would like to ask Mr. Puls to elaborate on the thing he was about to a few moments ago.

Mr. PULS. Yes. The Bureau of Reclamation has made reconnaissance designs at Brownlee site using two types of dams. One was the concrete dam and the other was a rock dam with impervious core. Both of the designs were different from the design as proposed by the Idaho Power Co.

At the time I made these studies we did not have available any subsurface investigation data, but later it was made available. As I understand, most of the exploratory data related to the central part of the channel and gave nothing on the abutments.

From my examination of the site and the geological conditions there I suspect some weaknesses on the abutments which will require additional data to show whether or not those weaknesses are serious.

Mrs. GREEN. If you were responsible for the design of the project, would you consider that the safest design would be concrete instead of a rock fill or would you think concrete slabs as the company first proposed?

Mr. PULS. I did not understand the last part of your question.

Mrs. GREEN. Or one with concrete slabs as the Idaho Power Co. first proposed. At least it is my understanding that they proposed that.

Mr. PULS. I would prefer either the concrete dam, provided the foundation is adequate to support it, or the rock dam with an earth impervious core, which is more definite, secure, more competent, sealing of the dam.

Mrs. GREEN. Then would you say there were definite problems of construction which might increase the cost?

Mr. PULS. I have only suspicions, and it would require additional work to determine whether or not those suspicions are well founded.

Mrs. GREEN. Mr. White, a moment ago on the question of irrigation you were about to give some testimony in regard to the cost of 104,000 acres. Would you do that now?

Mr. WHITE. I understood the question to be related to the latest plan the Bureau of Reclamation studied.

Mrs. GREEN. That is what I would like to have.

Mr. WHITE. On that plan, the construction cost itself for the irrigation facilities alone was slightly over $500 per acre. The annual operating costs, as I recall, were in the neighborhood of $7 or $8 an acre.

Mrs. GREEN. Mr. Ostrander, the Hungry Horse project is a project which is very similar to the Hells Canyon project in storage; is that right?

Mr. OSTRANDER. In its operating plan, that is correct.

Mrs. GREEN. And a part of the integrated system?

Mr. OSTRANDER. Yes, ma'am.

Mrs. GREEN. Could you tell the committee whether the operations of the Hungry Horse project thus far has resulted in meeting its payments on the payout schedule on its reimbursable power investment?

Mr. OSTRANDER. We have made substantial payments of power revenues to the Hungry Horse project, more, in fact, to date than the schedule will ultimately require, in my opinion. However, we have not formalized and agreed with the Bureau of Reclamation on the final payout schedule.

Mrs. GREEN. Would you say that the same kind of a record would probably be established at Hells Canyon?

Mr. OSTRANDER. By the time the Hells Canyon project is built, if it is built, we will be in a situation in which there will be a number of other dams in the system. Those dams having been constructed at cost levels higher than prevailed when Bonneville and Grand Coulee were constructed, we will probably find that we do not have a surplus in our rates that we have had to date. So I would not necessarily expect, unless there is quite an increase in rates, that we would continue to show the surplus. In fact, we have no basis for showing surplus. We are simply supposed to meet our obligations.

Mrs. GREEN. Do you have any figures showing the additional estimated revenues procurable from the sale of secondary power from Hells Canyon?

Mr. OSTRANDER. I think I may have some figures in my briefcase. I could dig those out. They are rather rough.

Dr. MILLER. Mr. Chairman, I am not able to hear the witness.

Mr. OSTRANDER. I do have some figures, rather rough figures, in my briefcase, if you will give me a minute to get them out.

Mrs. GREEN. In your opinion, would it help to meet the payout requirements based upon the sale of the firm power?

Mr. OSTRANDER. Yes. Although my analysis is made only in terms of firm power, I recognize that the prospects for the sale of secondary are very good, at least for many years to come; and that additional revenue will, of course, help the repayment of the project costs.

Mrs. GREEN. And the revenue from the secondary power in the Bonneville system has been a significant factor in helping meet the payout requirements. Is that not right?

Mr. OSTRANDER. It has been one of the important factors in our surplus situation to date, yes.

Mrs. GREEN. Mr. Chairman, could I ask unanimous consent of the committee to have the decision by the Federal Power Commisison examiner, Mr. Costello, made a part of the record at this point?

Mr. ASPINALL. The gentlewoman from Oregon has asked unanimous consent to have the report of Mr. Costello, the examiner for the Federal Power Commission——

Mr. BUDGE. Mr. Chairman, I object for the reason we have already by reference included the Federal Power Commission proceedings in the files of this committee. That is already a part of the file.

Mr. ASPINALL. Objection has been heard. The lady will proceed.

Mrs. GREEN. Mr. Chairman, I move that the decision of Mr. Costello be made a part of the record.

Mr. ASPINALL. The chairman would suggest to the gentlewoman if she is not careful we will not finish this morning. There is not a quorum in the room.

Mrs. GREEN. I withdraw my request.

I would like to yield my time to the gentlewoman from Idaho to get the testimony she asked from Mr. Riter a few minutes ago, which I think is very important.

Mrs. PFOST. Thank you.

Mrs. GREEN. Mr. Chairman, will you recognize me for that motion now?

Mr. ASPINALL. Half a minute. All those in favor——

Mrs. GREEN. I withdraw my motion.

Mr. ASPINALL. The time of the gentlewoman from Idaho has expired. The gentleman from Idaho, Mr. Budge, is recognized.

Dr. MILLER. Will the gentleman yield for one question?

Mr. BUDGE. Certainly.

Dr. MILLER. Which one of you gentlemen has to do with the power situation, the selling of power and so forth, in the area?

Mr. SAYLOR. Mr. Ostrander.

Dr. MILLER. Mr. Ostrander, do you know what the rate for power has been to the Kaiser Aluminum Co. and the American Aluminum Co. in the area?

Mr. OSTRANDER. We sell power to those aluminum companies at our so-called C–4 rate schedule, which is $17.50 per kilowatt-year of firm power.

Dr. MILLER. 1.7 mills?

Mr. OSTRANDER. No, sir. If they were able to take power on 100 percent load factor, it would average 2 mills. Actually they cannot achieve quite that good a load factor and it averages around 2.09 mills.

Dr. MILLER. Do these contracts that you make with Kaiser and the Aluminum Co. and other industries up there have withdrawals in favor of preference customers should they desire the power?

Mr. OSTRANDER. Not the industrial contracts.

Dr. MILLER. That is right. None of them have the withdrawal clause for preference customers. Those contracts were made a number of years ago.

That is all.

Mr. SAYLOR. Will the gentleman now yield to me?

Mr. BUDGE. Yes.

Mr. SAYLOR. I would like to ask Mr. Ostrander a few questions with regard to your statement the other day.

If you will refer to table B on page 1 of your statement, what year do you expect the Federal system to have an average energy of 7,837 million kilowatts?

Mr. OSTRANDER. You are referring to table B?

Mr. SAYLOR. Table B, column F, line 5.

Mr. OSTRANDER. The figure to which you refer is a system prime power capability of 7,837,000 kilowatts, assuming the completion of the phase C–2 system including the high Hells Canyon Dam. As I understand your question, you were asking when that might be.

Mr. SAYLOR. What year do you expect to have that average production?

Mr. OSTRANDER. That is a very speculative matter as to how fast that program will go forward. It may never be reached, of course, because the Federal system may not continue to expand. That possibly would be around 1970 if the thing went forward in a more or less orderly manner.

Mr. SAYLOR. If you will look at column E on that same table, you have listed 1,122,000 kilowatts of average energy. Do you intend to tell this committee that will continue throughout the entire payout period of the high Hells Canyon Dam?

Mr. OSTRANDER. According to the information supplied to me by our hydraulic engineers, there would be a few thousand kilowatts possible decrease over a 50-year period because of irrigation depletion, but that is a rather nominal amount according to their figures.

Mr. SAYLOR. What will be the amount of decrease?

Mr. OSTRANDER. In the neighborhood of 30,000 to 40,000 kilowatts, I think, at the most. I would have to check that, but I am sure that is an outside figure.

Mr. SAYLOR. Will you check it and have it available for us tomorrow?

Mr. OSTRANDER. Yes, I will be glad to do that.

Mr. SAYLOR. On page 2 of table B you have some units which you say will be added by Hells Canyon. What costs were included in your calculation for these additional downstream units listed on this page?

Mr. OSTRANDER. Those cost figures are shown in table E of the exhibit, Congressman Saylor. In the third column on the right-hand side of the table E you have the investment required on account of the units added under case B at the various other plants.

Mr. SAYLOR. That is on table E, column 2, or case B; is that right?

Mr. OSTRANDER. That is right.

Mr. SAYLOR. That is $349,356,000?

Mr. OSTRANDER. That would be for generation, including the amount at Hells Canyon, itself, allocated to power. And in addition, as shown down in line 19, there would be $146 million for transmission.

Mr. SAYLOR. Does this cost include any portion of a dam or just include the incremental costs of adding the units themselves?

Mr. OSTRANDER. At the projects other than Hells Canyon this represents the incremental costs of additional units required to utilize the Hells Canyon storage.

Mr. SAYLOR. There is no charge whatsoever for the use of the dam made downstream?

Mr. OSTRANDER. No, sir.

Mr. SAYLOR. In House Document 473, following page 202, was a pooled operation study. Have you made a table similar to that in view of the new estimates which have been made?

Mr. OSTRANDER. I am not familiar with that to which you refer. This appears to be a study made a few years ago, I presume, by the Bureau of Reclamation.

Mr. SAYLOR. That is correct.

Mr. OSTRANDER. And we at Bonneville Power Administration have not made studies like this; no, sir.

Mr. SAYLOR. Do you know whether or not the Bureau of Reclamation has made any similar studies?

Mr. OSTRANDER. I do not know, sir.

Mr. RITER. No, sir; not in recent years.

Mr. SAYLOR. There appears in the public works appropriations hearings for 1956, on pages 394–395, a statement by a gentleman designated as Robert Deluccia, of the Pacific Power & Light Co., in which he states that the Bonneville Power Administration has prepared an estimate for the next 10 years of the power needs of the Pacific Northwest, and that amounts to $3,500 million. Is that correct?

Mr. OSTRANDER. I have seen estimates of that in the vicinity of about a million dollars a day; in other words, for additional capital investment for the power program of the Pacific Northwest.

Mr. SAYLOR. In other words, it is your opinion as the Administrator of Bonneville that the Pacific Northwest will need a million dollars a day for the next 10 years, every day for the next 10 years, to supply the power needs in the Pacific Northwest?

Mr. OSTRANDER. That is not my opinion because it is not my study, Mr. Saylor, and I am not sure whether those figures include distribution, generation, transmission, and everything else.

Mr. SAYLOR. Assuming those figures to be correct, do you expect the Federal Government to provide all that money?

Mr. OSTRANDER. Mr. Congressman, I am well aware of the point you are making. As a matter of fact, some 10 years ago I made the same point in a public statement in the city of Pendleton, Oreg., that at that time our program for the Federal system was something like $100 million a year, and called attention to the fact at that time it was going to be a difficult financing job on the part of the Government.

Mr. SAYLOR. I will yield back to Mr. Budge. I have some other questions, but since these witnesses will be back tomorrow I will reserve them.

Mr. PILLION. Will the gentleman yield?

Mr. BUDGE. Yes.

Mr. PILLION. Mr. Ostrander, I have before me the 1953 report on the Columbia River power system. On one page here it shows that the net revenues, after deducting the interest, depreciation, and the operation and maintenance, amounts to about $6 million per year applicable to the amortization. Is that about right?

Mr. OSTRANDER. I thought the net revenues there were around $8 million.

Mr. PILLION. I have 6.5.

Mr. OSTRANDER. Is that an estimate?

Mr. PILLION. That is 1955.

Mr. OSTRANDER. That was estimated for 1955.

Mr. PILLION. Yes.

Mr. OSTRANDER. I see.

Mr. PILLION. Now——

Mr. OSTRANDER. May I supplement my statement just a moment, sir?

Mr. PILLION. Yes.

Mr. OSTRANDER. I do not want to have the record unclear or misleading. You say "available for amortization"?

Mr. PILLION. Yes.

Mr. OSTRANDER. In addition to that surplus available for amortization, the amount appearing above in reserve for depreciation expense also would be available, sir, because depreciation is recovery of investment or amortization.

Mr. PILLION. How much of the depreciation is available for amortization?

Mr. OSTRANDER. All of it.

Mr. PILLION. All of it?

Mr. OSTRANDER. Yes, sir.

Mr. PILLION. How much is applied for depreciation itself?

Mr. OSTRANDER. That is what depreciation is, sir, recovery of capital investment. So it is all turned back to the Treasury in repayment of the investment. We cannot reinvest it.

Mr. PILLION. Is it not true, Mr. Ostrander, that about $500 million of the $600 million investment is repayable at interest rates of 2.5 percent and that about $200 million only is repayable at an interest rate of 3 percent?

Mr. OSTRANDER. I beg your pardon, sir, but I think you are getting into a legal question there. I can state what I have been given to understand the law is.

Specifically, except for one very small project, the Roza project, the laws do not specify any rate of interest. Administratively we have adopted a 2.5 percent rate up to this time. And, of course, in the case of the——

Mr. PILLION. I am taking the statement of the Interior Department booklet, which says that approximately $200 million is repayable at 3 percent and the balance is repayable at 2.5 percent.

Mr. OSTRANDER. That 3 percent refers to the Columbia Basin project.

Mr. PILLION. That is right.

Mr. OSTRANDER. An administrative determination rather than a legal one. That is the point I wanted to make.

Mr. PILLION. The point I would make is this: That approximately $500 million of the total investment, between four and five hundred million dollars, is repayable at 2.5 percent, whereas the Federal Government has a difficult time borrowing at 3 percent on this type of bond. That is the point I would like to make. And with respect to that one-half of 1 percent, it amounts to considerable when you get into hundreds of millions of dollars; that the taxpayers at large over the United States are, of course, burdened with the additional one-half of 1 percent.

Now with regard to Hells Canyon, take a comparable 800,000-kilowatt-capacity dam and reservoir and powerplant owned by a private utility. Do you have any idea what the average overall Federal cor-

poration taxes in the United States are that would be paid by a similar comparable plant?

Mr. OSTRANDER. No; I do not know.

Mr. PILLION. Assuming it were 3 or 4 or 5 million dollars and that Hells Canyon will escape paying that tax, does not that then become a subsidy to the users of electricity there and the irrigators who will benefit at the expense of the taxpayers at large throughout the United States.

Mr. OSTRANDER. I think that is a rather philosophical question, Congressman.

Mr. PILLION. Yes.

Mr. OSTRANDER. We could argue the rest of the week on that.

Mr. PILLION. Except it is not philosophical when we are trying to balance the budget and when we are trying to raise taxes. Then it does not become philosophical; it becomes a very practical question on the floor of the House.

I yield back.

Mr. BUDGE. I want to get in my minute and three-quarters today.

Mr. ASPINALL. You have just about that much time.

Mr. BUDGE. Mr. Riter, the gentleman from Texas, Mr. Rogers, commented about the building of some dams in his experience. There would not be any question in your mind, if both of them are actually integrated, that the dams as designed by the Idaho Power Co. would produce as much as the three dams that the Bureau has designed? In other words, the power production, assuming full integration, would be the same no matter what the type of structure. That is correct, is it not?

Mr. RITER. Yes. I made no difference on that. I assumed completely integrated system.

Mr. BUDGE. On this 710,000 kilowatts over an 8-month period, what happens to that during the other 4 months?

Mr. RITER. During the other 4 months the system will supply the energy.

Mr. BUDGE. In other words, there are 4 months out of the year that you are not taking any credit for power production at Hells Canyon; is that correct?

Mr. RITER. Mr. Budge, in both the analyses for the three-dam and the high-dam scheme I assumed that during the flood season, a period of excess runoff on the Columbia River—in fact, our studies show that there would be adequate power to meet the system demand.

Mr. BUDGE. It would be some 4 months, then, Idaho Power would have to get whatever power it gets from some other source than the Hells Canyon Dam; is that right?

Mr. RITER. I assume it would get it from other plants in the system if this scheme is put into operation.

Mr. ASPINALL. The time of the gentleman has expired.

The Chair has 3 or 4 announcements he would like to make at this time.

First, the Chair requests the technical witnesses who are now at the witness table to be here in the morning, and the time, as I suggested a while ago, will be charged to those in opposition. The Chair wants the record to show that these gentlemen are appearing here at the request of the Chair and that they are appearing neither as proponents or opponents as far as they are individually concerned.

The second announcement that the Chair wishes to make is that those who have exhibits, such as telegrams and letters, please hand them to Mr. McFarland between now and tomorrow morning so that Mr. McFarland may look them over, and then the request may be made, whether they are for or against, that they be inserted as part of the record, with the understanding that there will be no identical resolutions, as such, made a part of the record but reference will be made to them.

The Chair has a few telegrams that he has received that he has already handed Mr. McFarland.

We shall meet at 9:45 a. m. with the hope that we will be able to get underway just as soon after that time as possible. We have lost some time for the last 2 mornings.

The Chair wishes to advise those who are appearing from the area to be here at that time. There will be approximately 17 minutes given to some representative or representatives from the area speaking in favor of this to make their oral presentation.

The Chair understands that Mr. Elmer McIntire and Mr. Sam Fretwell are in the room. Will you gentlemen please stand? Is it right that you must leave Washington this afternoon and will be unable to be here tomorrow?

Mr. McINTIRE. That is right.

Mr. FRETWELL. Yes.

Mr. ASPINALL. Do you have testimony that you wish to present?

Mr. McINTIRE. Yes, sir; we do.

Mr. FRETWELL. Yes, sir.

Mr. ASPINALL. Have you handed a copy of your statements to the clerk?

Mr. McINTIRE. We have.

Mr. FRETWELL. Yes.

Mr. ASPINALL. Unless there is an objection, the testimony of Mr. McIntire and Mr. Fretwell will be made a part of the record at this point because we have not been able to get to them.

Hearing no objection—I understand, gentlemen, that you favor the project?

Mr. McINTIRE. That is right.

Mr. FRETWELL. Yes, sir.

Mr. ASPINALL. There is no objection and it is so ordered.

Thank you very much. The committee stands adjourned.

(The statements referred to follow:)

STATEMENT OF SAM FRETWELL

Mr. Chairman, and ladies and gentlemen of the House Subcommittee on Irrigation and Reclamation, my name is Sam Fretwell. I am a farmer, and chairman of the Idaho-Oregon-Washington Hells Canyon Association, an organization of some 10,000 members organized for the purpose of telling the real story of Hells Canyon Dam to the people of the Northwest.

With very limited finances we have met the highly financed propaganda campaign of the Idaho Power Co. with facts and figures provided by the Corps of Army Engineers, the Bureau of Reclamation, and the Bonneville Power Administration; and have come out victorious in all cases.

A few weeks ago, after 2 years of hearings, the examiner for the Federal Power Commission stated that the high dam was superior to the three-dam plan. Yet

he recommended that Idaho Power be allowed to build one of their dams, because he was afraid Congress would not authorize the high dam; and for him to recommend its construction would only "freeze" that stretch of the river.

Under the terms of the Federal Power Act, political forecasting was not included as part of the Federal Power Commission's duties, and I would like to remind the examiner that—any time, any place, a frozen asset is better than a wasted one. Wasted it will be if a license is granted to Idaho Power for their three small dams.

On my farm in Idaho I have a small herd of dairy cattle. One of the chief jobs which is connected with dairying is the raising of replacements for the herd. Calves which are allowed all they want to eat soon get the scours and will die if their rations are not cut, and proper preventive measures taken.

The Idaho Power Co. is very much like a greedy calf, and you, the Congress of the United States, should act as a good dairyman would to prevent them from an excess which could kill them just as surely as too much feed will kill the calf.

To explain what I mean; the Idaho Power Co. operates in the heart of the Northwest, a region which has 40 percent of the Nation's hydroelectric power potential. Yet, because they have a complete monopoly in the area which they serve, they are able to maintain a residential service rate approximately 60 percent higher than other parts of the Northwest. In Portland, Oreg., for instance (under the private power company rate) 500 kilowatt-hours of electricity sells for $5.60. In Idaho the same amount sells for $8.80.

Under the findings of the Federal Power Commission examiner, the cost of power from the power company's 3 dams would be 6.69 mills per kilowatt-hour compared with 2.5-mill power which is being sold by the Bonneville Power Administration. That means that if the Hells Canyon power potential is turned over to the Idaho Power Co. then the cost of power will have to be raised in the Northwest. When that happens, the Idaho Power Co. will be about as popular in the Northwest as Mr. Dixon and Mr. Yates are in Memphis, Tenn. The reaction which would come from the Northwest would probably be more than the company could survive. Already we in southern Idaho can drive to the northern part of the State and see our friends heating their homes with electricity at 5 mills per kilowatt-hour, while we pay 17½ mills for all over 900 kilowatt-hours, and then pay from 30 to 50 dollars per month for coal or oil to heat our homes. You can readily see why the greed of this utility may be their Waterloo if you do not act to prevent it.

Greed it is, because they have owned the Oxbow site for some 30 years and have made no attempt to develop it. The last few years it has been completely abandoned, but just 3 days befor the Army engineers held their hearings in Lewiston on the proposed high dam the power company rushed in and filed an application before the Federal Power Commission to build a power dam at Oxbow. They also have other sites upstream which could be developed more quickly than Oxbow and would alleviate their power shortage sooner. Their sole purpose in demanding that they be allowed to develop Oxbow first is to insure them against any competition from low-cost power, which would be provided by the high Hells Canyon Dam.

No doubt you will be told here—as the Federal Power Commission was—that their power will not cost 6.69 mills. They will also state that they have firm commitment from a construction company to build their 3 dams for $133 million; but I have spent 4 years as chairman of the board for a highway district, and I know that the offer or bid of a contractor is only as good as the engineer's estimate. If the estimate is 50 percent lower than it should be, then the construction cost will overrun by the same amount. They do not bid for the complete dam in one lump, but rather they bid on the number of cubic yards which the engineers estimate at so much per cubic yard. Then if they have to move twice as much material as the engineers estimated, it costs just twice as much as their bid.

A prime example of such a contract was enacted near Paducah, Ky., when the Ebasco Services, Inc., attempted to build a plant to supply additional power to the AEC installations there. They first estimated that they could build it for $65,300,000, later they raised it to $70 million, then $87 million. This figure

increased to $128,500,000 before Ebasco was fired and another firm hired to do the job.

I would like to remind the committee that Ebasco Services, which created that fiasco, is the same company which makes the designs and specifications for the Idaho Power Co.

Now I know that you committee members have listened to reams of facts and figures, most of them in the millions and the billions, until the amounts get to mean very little to you. One day last week as I was spraying the weeds in my corn I got to thinking about the expenses involved in operating a farm, and I wondered if we had not been working at this from the wrong way. Instead of giving a lot of collective figures, why would it not be better to bring it down to an individual basis? For that reason, I would like to give you a little insight into what reclamation means to this Nation as well as to us in the West.

My farm is located in the Black Canyon Irrigation District, a Bureau of Reclamation project. And, like practically all of the reclamation projects, power revenues from the Black Canyon Dam are helping to pay the cost of putting the water on the land.

My farm has approximately 190 acres of irrigable land, and I am operating on lease 87 acres more. Bear in mind that the Mountain Home project, which could be made feasible by the construction of the high Hells Canyon Dam, would contain over 1,000 farms the size of my own.

First in the line of expenditures, of course, are taxes. My property tax bill for this year will be about $1,000. Seed purchased amounted to $750. My payments to the Black Canyon for water was $1,152. Gas and oil and accessories for my tractor and truck amounted to $1,150. Fertilizer which was the second largest item will amount to over $2,000 this year. And I wish to say here that the cost of that fertilizer could be greatly reduced if low-cost power is made available for processing of raw rock phosphate of which Idaho has billions of tons.

Last but most important is the labor bill. The threshing and trucking of small grain will come to about $500. Baling of hay, $700. Threshing clover seed, $430. Picking corn, $350. Most expensive of all is the 45 acres of sugar beets. The labor bill for producing and harvesting them will amount to about $150 per acre, or a total of over $6,000.

When you add those expenses all together you come up with a total of over $14,000, which will have to be produced before I can break even. Add to that the cost of repairs and depreciation of machinery, plus interest on farm notes and mortgages, then multiply it by the 1,000 or more farms which could be produced from the Mountain Home Desert and you begin to get some idea of what will be lost to Idaho and the Nation if the Snake River is given to the Idaho Power Co. instead of being used for a multiple-purpose dam as it should be.

Farmers produce new wealth every year, but few farmers ever become wealthy. The minute he sells his crops, he heads for town to pay bills. The dollar which he receives for his product revolves 9 or 10 times through the hands of retailers, wholesalers, manufacturers, and tax collectors before he again comes to market with more new wealth. After he has paid his bills, he is subject to the same rate of income tax as anyone else.

The Boise project in Idaho cost the Federal Government $62 million but between 1928 and 1949 the Government collected $96 million in income taxes alone from it. After income taxes are paid, if there is enough money left to make a downpayment, the farmer usually buys another piece of machinery. It would cost over $10,000 to replace my machinery. Yet the man who is growing the beets for me under contract, has over $15,000 worth of equipment with which to produce and harvest them alone.

All of those things mean more men working in mines, mills, and factories, with more payrolls and more taxes. And so it is that the proposal of the Idaho Power Co. to mutilate the greatest potential power site we have left, just in order to maintain their high rate structure and enjoy a continued monopoly in the territory is shown up for the cheap substitute which it is, when the light of economic facts and figures is turned upon it.

We in Idaho are not asking that you consider Hells Canyon from a political standpoint. We wish that the present administration would get behind it just

as they have the upper Colorado and get it authorized immediately, and thus remove it forever from partisan politics.

We don't ask that you consider it from a public versus private power standpoint. It has been demonstrated throughout the Northwest that public and private companies can live side by side and both prosper. But we do ask that you consider Hells Canyon Dam on its merits. For what it will do for Idaho and the Nation, and what will be lost if it is not constructed.

When you have done that there is only one way which you can vote on this bill, and that is for the authorization of the high dam in Hells Canyon.

STATEMENT OF ELMER F. MCINTIRE

My name is Elmer F. McIntire, executive secretary of the Idaho State Federation of Labor, with headquarters at 613 Idaho Street, Boise, Idaho.

I am here representing 123 local unions in Idaho, with approximately 15,000 members affiliated with the Idaho State Federation of Labor. I am appearing today on behalf of those 15,000 workers and their families, who wholeheartedly support the Federal Government building the high dam at Hells Canyon.

Our records show that at least 80 percent of our members are unemployed 7 months out of the year. This, we are sure you will agree, is neither good for the economy of the State, the region, nor the Nation as a whole. It is our belief that the low-cost power from Hells Canyon will provide many thousands of new jobs, as well as firming up the economy for more year-round payrolls which the Northwest needs badly.

I would like at this time to explain my own personal feelings regarding this most important project, the high Federal Hells Canyon Dam.

My family came to Boise, Idaho, from the great State of Missouri in 1906. I was 4 years old at the time, and I have lived in Boise and the Boise Valley ever since, except for 3 years I spent in the Army of the United States.

I have been married since 1923 and have two children who are both married and have children of their own. My father has farmed the Boise Valley, and my early life was spent on a ranch there. But since I have been married, I have been living in town, and, of course, like thousands of other families during the period 1929–33 I worked at whatever jobs were available. I have been employed by the Union Pacific, now the Greyhound Lines since December 9, 1933, until August 1948, when I was elected executive secretary of the Idaho State Federation of Labor.

But even as far back as 1929 I have heard it said many times by people in Boise that they didn't want any industry in or around the city, because the streets would be cluttered with people carrying dinner buckets. I am just as confident as I am speaking to you today that these same people who were fighting progress back in 1929, many of them are against the building of the high Hells Canyon Dam today.

We are sincere in what we state: That if the Federal high Hells Canyon Dam is built, farmers, labor, and business will greatly benefit. So, with these facts, I have mentioned, we the members of the Idaho State Federation of Labor urge that you vote favorably for the Federal Hells Canyon Dam.

(The attached resolutions No. 18 and No. 19 in support of a Federal multipurpose high Hells Canyon Dam, were passed unanimously at the 39th annual convention of the Idaho State Federation of Labor, held June 13–16, 1955, at Pocatello, Idaho, and are herewith submitted to be included in the testimony presented by Elmer F. McIntire, executive secretary of the Idaho State Federation of Labor and the official representative for the Idaho State Federation of Labor at the hearings of the House Interior and Insular Affairs Committee to be held July 11–13, 1955, in Washington, D. C.:)

RESOLUTION 18

Whereas the Idaho State Federation of Labor has consistently supported the Federal construction of the multipurpose high Hells Canyon Dam, as outlined in House bill No. 4719, with moral and financial aid; and

Whereas the Honorable Congresswoman Gracie Pfost has distinguished herself in the Congress of the United States by consistently working for the best interests of all the people both here in Idaho and the Nation; and

Whereas this bill must show strong support from the home State of Idaho: Therefore, be it

Resolved, That the Idaho State Federation of Labor go on record favoring the passage of House bill No. 4719, and to further support the bill's passage by sending a qualified representative in behalf of the Idaho State Federation of Labor.

Respectfully submitted by:

MAYNARD L. KENDALL,
RAY NIMS,
Delegates from I. B. P. S. and P. M. W.

Approved by the sixth district:

HOBART D. BURNS,
Sixth District Vice President.

Committee concurs, with the amendment, "if funds are available to send a delegate to Washington."

RESOLUTION 19

RESOLUTION TO THE 39TH ANNUAL CONVENTION OF THE IDAHO STATE FEDERATION OF LABOR

Whereas the Idaho State Federation of Labor has for many years supported the movement for a federally constructed high dam in the Hells Canyon stretch of the Snake River;

Whereas such support was rendered due to our federation feeling that such project would bring the greatest good to the largest number of Idaho residents: Therefore, be it

Resolved, That this 39th annual convention again go on record as favoring the Hells Canyon Dam project, to be built by our Federal Government.

FRED H. MCCABE, *Delegate.*

(Whereupon, the subcommittee recessed at 12:02 p. m., until 9:45 a. m., Thursday, July 14, 1955.)

HELLS CANYON DAM

THURSDAY, JULY 14, 1955

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON IRRIGATION AND RECLAMATION OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 9:50 a. m., in the committee room, New House Office Building, Hon. Wayne N. Aspinall (chairman of the subcommittee) presiding.

Mr. ASPINALL. The Subcommittee on Irrigation and Reclamation will now be in session for the further consideration of H. R. 4719 and similar bills.

The Chair wishes to take care of a few matters before we continue with the testimony.

Unless there is an objection, the Honorable Don Magnuson from Washington and any other Member of Congress will have permission to insert his remarks in the record as of the beginning of the hearings.

Is there objection?

Hearing none, it is so ordered.

Do you wish to make any statement, Mr. Magnuson, other than that you have been here all these weary hours?

Mr. MAGNUSON. Mr. Chairman, just in the interest of saving time I will defer to the witnesses who have come a long ways to testify and be content with just putting my statement in the record. (See p. 9.)

Mr. ASPINALL. Thank you very much. We are glad to have you with us during the hearings.

Now the statements of Messrs. McIntire and Fretwell were made a part of the record yesterday.

Under the permission which was granted yesterday by the unanimous consent request, the statement of Mr. Asher B. Wilson of Twin Falls, Idaho, will be made a part of the record. Mr. Wilson, will you stand so we can see who you are. Fine. I understand there is a possibility you will be on the stand later this morning.

(The statement referred to follows:)

STATEMENT OF ASHER B. WILSON, TWIN FALLS, IDAHO

Mr. Chairman and members of the committee, my name is Asher B. Wilson. I reside at 708 Shoshone Avenue E., Twin Falls, Idaho. I have lived in Idaho since June 1, 1914. I am the owner of several irrigated farms and have been interested in irrigation on the Twin Falls and Salmon tracts during my residence in Idaho. I am also a practicing attorney in the State of Idaho.

May I first discuss with you the right of the Federal Government to waters of navigable streams and tributaries.

Improper use has been made of the report prepared by Frank B. Horne, of the American Law Division of the Library of Congress, in answer to questions propounded by Congressman Hamer Budge of Idaho's Second District on the

rights of Congress over navigable streams and their tributaries, and on the effect of the pending Hells Canyon bills.

Article 15, section 2, Idaho constitution deals with the matter of priority of appropriation being the better right; and providing that use of water for domestic and farming purposes shall have preference over other industries.

Article 1, section 14, Idaho constitution provides for taking private property for public uses, but not until a just compensation, to be ascertained in the manner prescribed by law, shall be paid therefor.

Article 1, section 8, clause 1, Constitution of United States provides for the common defense and general welfare of the United States.

Article 1, section 8, clause 18, Constitution of United States provides that the Congress shall make all laws which shall be necessary and proper for carrying into execution the foregoing powers and all other powers vested by this Constitution in the Government of the United States, or any department or officer thereof.

Article 1, section 10, clause 3, Constitution of United States provides that no State shall enter into agreement or compact with another State wihout the consent of Congress.

Article 1, section 9, clause 6, Constitution of United States powers denied Congress. No preference shall be given by any regulation of commerce or revenue to the ports of one State over those of another, nor shall vessels bound to or from one State be obliged to enter, clear, or pay duties to another.

Article 1, section 10, clause 1, Constitution of the United States, powers denied States: No State shall enter into any treaty, alliance, or confederation.

In *Ashwander* v. *TVA* ((1936) 297 U. S. 288–328) it was held that in the common defense as provided in the Constitution navigation and commerce are important; and, cited numerous acts of Congress; such as providing for the construction, management, and operation of the Panama Canal.

In *United States* v. *Gurlach Co.* ((1949) 339 U. S. 725, 738), it was held that Congress has power to promote the general welfare, through large-scale projects for reclamation, irrigation, or other internal improvements, is now clear and ample.

The power of Congress is limited to waters which are navigable in law for the purpose of interstate and foreign commerce, and to nonnavigable tributaries of such navigable waters, insofar as the control and utilization of the flow of the tributaries will affect the navigable waters below (Oklahoma ex rel. *Phillips* v. *Guy F. Atkinson Co.* (313 U. S. 508 (1941))) within these limits the rights and powers of the States are subservient to the interstate commerce as directed by the Congress. The court has not the power of estoppel against the acts of Congress.

In *United States* v. *Chandler-Dunbar* ((1913) U. S. 22953, 76) it indicated a probable limit on compensation where navigable waters are confronted with private propriatory rights existing under State law to use of waters of a navigable stream for power purposes, characterizing the rights of the power company as usufructuary (the right of using the property of another and of drawing the profits it produces without wasting the substance), rights to use the water for generation of power, distinguished from claims to the legal ownership of the running water itself.

The Congress in instances has not exercised its rights as above stated concerning power companies: For instance, the Idaho Power Co. was paid approximately $1 million for some partially developed usufructuary rights at American Falls when the American Falls Dam was built in the early 1920's. Congress has been very liberal in such instances with private power companies.

Article 15, section 4, Idaho constitution: Continuing rights to water guaranteed. Whenever any waters have been, or shall be appropriated or used for agriculture purposes, under a sale, rental, or distribution thereof, such sale, rental, or distribution shall be deemed an exclusive dedication to such use; and, whenever such waters so dedicated shall once be sold, rented, or distributed to any person who has settled upon or improved land for agriculture purposes with the view of receiving the benefits of such water under such dedication, such person, his heirs, executors, administrators, successors, or assigns, shall not thereafter, without his consent, be deprived of the annual use of same, when needed for domestic purposes, or to irrigate the land so settled upon or improved, upon payment therefor, and compliance with such equitable terms and conditions as to the quantity used and times of use, as may be prescribed by law.

Board of Directors of Wilder Irrigation Dist. v. *Jorgensen* (64 Idaho 538, 136 Pac. 2d 461), vested rights: Neither the district, the State, nor the United

States can take existing vested rights without payment of the just compensation therefor.

American Falls Dist. No. 2 v. *Crandall* (82 F. 2d 973), determination of conflicting claims: The Government is a necessary party to a suit under the Idaho statute for a summary supplemental adjudication of water rights under a contract between plaintiff and the Secretary of the Interior.

Article 4, section 3, clause 2, Constitution of United States: The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States; and nothing in this Constitution shall be so construed as to prejudice any claims of the United States, or of any particular State.

Article 6, clause 2, Constitution of the United States: This Constitution and the laws of the United States which shall be made in pursuance thereof and all treaties made, or which shall be made, under the authority of the United States, shall be the supreme law of the land, and the judges in every State shall be bound thereby, anything in the constitution or laws of any State to the contrary notwithstanding.

Reclamation Act of the United States, 1902–38 edition of the manual of the Reclamation Service, states that section 8 of the reclamation law is directory, not mandatory; however, in *Nebraska* v. *Wyoming* ((1945), U. S. 325, 589), it is merely assumed for the purposes of argument Id. Applying the policies established legislatively by section 8, the Supreme Court said that the property right in a water right was separate and distinct from the property right in irrigation works. Under the law, the water right is appurtenant to the land, the owner of which is the appropriator. Thus, even if it were assumed that the United States owned the appropriated water rights, they could be acquired by private owners in the precise manner contemplated by Congress (Id., p. 615). The question of ownership by the United States of unappropriated water, therefore, was held to be largely academic so far as the issues of the suit were concerned. The same question was passed over in *United States* v. *Gerlach Co. et al.* ((1950), 339 U. S. 725, 739), the Court stating we need not ponder whether, by virtue of a highly fictional navigation purpose, the Government could destroy the flow of a navigable stream and carry away its waters to private interest without compensation to those (riparians) deprived of them. (See also *Niagara Mohawk Power Corp.* v. *F. P. C.* (1952), 202 F. 2d 190 Id. (1954), 22 L. W. 4162.)

Navigability, if any, in fact may be aided rather than destroyed by appropriations for irrigation, flood control, dams impounding excess waters for future release, and for other purposes, such as stabilization of the rivers' flow for commerce; Congress through its several acts has relinquished its rights to summarily recover the waters used for irrigation, flood control, and related purposes in the several States.

Viewing the courts' decisions on these problems, it is reasonable to believe that the courts will at all points protect the irrigation and other rights when the issues come squarely before the Supreme Court of the United States based on the actions of the Congress.

Inasmuch as 17 States are banded together under the National Reclamation Association and keep abreast of all legislation, it is not conceivable that the Congress will ever attempt to disturb the waters used for irrigation and related purposes in any of the reclamation or other States.

Congress can be depended upon to provide any further legislation necessary to properly protect the irrigation rights of all appropriators.

Congress cannot discriminate against any State—all must be treated equally; hence Idaho's irrigation waters cannot be disturbed without disturbing the irrigation waters of other States.

The material submitted to Mr. Horne by Congressman Budge is not available for scrutiny as Mr. Horne states he returned all material submitted together with his opinion to Mr. Budge.

Questions submitted by Congressman Budge were loaded questions apparently from the answers and summarization given by Mr. Horne to Mr. Budge.

Mr. Horne suggested three ways to handle the matter.

1. Pass Federal legislation.
2. Form compacts.
3. Provide for adjudication by the courts.

The second suggestion has proven highly unsatisfactory to most of the participants in compacts. The Colorado River compact is an example. The prize statement on that came from Senator Millikin, Republican, Colorado, who said, "The rich State takes all."

I am a firm believer that Congress already has released far too many powers to monopolies, to the detriment of the people.

The Senate bill and the House bills for construction of Hells Canyon Dam now pending in the Congress properly provide for the safeguarding not only of existing irrigation rights but for future rights also along the Snake River and its tributaries.

As a member of the Idaho bar, I received under date of March 4, 1955, a letter from Congressman Budge of Idaho's Second District, calling my attention to the fact that the Western Water News carried a résumé of the Frank B. Horne report, and enclosing a full copy of that report. Both the letter and the report were mailed to me under Mr. Budge's congressional frank.

In response to questions by Congresswoman Gracie Pfost, of Idaho's First Congressional District, relative to the subject of water rights, this same Frank B. Horne gave the following answer to Congresswoman Pfost: "Your question as stated by telephone message is, 'Can a farmer's or irrigator's right to the beneficial use of waters (previously granted) be taken away arbitrarily, or must it be done by due process with just compensation'? The question, you state, arises in connection with the Hells Canyon bill."

In some circumstances, a question such as this could be answered categorically in the affirmative, because vested water rights, under applicable Federal and Idaho State laws, are more than merely usufructuary in character. They are, in many cases, appurtenant to the land and the accepted view is that they have all the dignity of a freehold. See Constitution of Idaho (art. 15, sec. 3; Idaho Code (1947), secs. 42–101 to 104); Reclamation Act of June 17, 1902 (32 Stat. 388, 390 U. S. C. 43:383); section 1 of the Flood Control Act of 1944 (58 Stat. 887); subsection 3 (e) of the Submerged Lands Act of 1953 (67 Stat. 29, 31); and Wiel, Water Rights in the Western States (3d ed., 1911) sections 18, 283, and 285. Early Idaho case law recognized and declared vested water rights to have freehold status. See *Boise City Irrigation and Land Co.* v. *Stewart* ((1904) 10 Idaho 38, 77 Pac. 25, 32, and 321); *Ada County Farmers' Irr. Co.* v. *Farmers' Canal Co.* ((1898) 5 Idaho 793, 51 Pac. 990, 992); *McGinness* v. *Stenfield* ((1898) 6 Idaho 372, 55 Pac. 1020); *Hall* v. *Blackman* ((1902) 8 Idaho 272, 68 Pac. 19); *Taylor* v. *Hulett* ((1908) 15 Idaho 265, 97 Pac. 37, 38); and other cases. The right is constitutionally protected. *Knowles* v. *New Sweden Irr. District* ((1908) 16 Idaho 217, 101 Pac. 81, 86). The fifth amendment to the Constitution of the United States clearly says that no person shall be deprived of property without due process of law; nor shall private property be taken for public use without just compensation. Further the 14th amendment says that States shall not deprive a person of property without due process.

The answer to the question you have raised is not so easily disposed of, however, when framed with reference to Hells Canyon and the Snake River. The Supreme Court of the United States has held that river to be a navigable stream at the boundary between the States of Oregon and Idaho, *Scott* v. *Lattig* ((1913) 227 U. S. 229). Further from an early period, the Supreme Court has held that the power to regulate commerce, under article 1, section 8, clause 3, included navigation within the limits of the State, *Gibbins* v. *Ogden* ((1824) 9 Wheat. 1). This constitutional authority must, of course, be harmonized with other provisions of the Constitution which unavoidably deals in general language. *Martin* v. *Hunter* ((1816) 1 Wheat. 304, 326).

We have not found a satisfactory guide indicating the extent of Federal power to control navigation or exercise other constitutional powers to the detriment of vested water rights on navigable streams. Most decisions appear to avoid the precise issue. See *Niagara Mohawk Power Corp.* v. *F. P .C.* ((1952) 202 Fed. 2d 190); *U. S.* v. *Chandler-Dunbar Co.* ((1913) 229 U. S. 53, 69; *Oklahoma ex. rel. Phillips Governor* v. *Guy F. Atkinson Co. et. al.* ((1941) 313 U. S. 508). However, we respectfully suggest that even the admission of the existence of a paramount power does not argue necessarily that it will be improperly used, or used to the detriment of owners of water rights appurtenant to lands.

The American Law Division of the Legislative Reference Service might be compared in some ways to a group of law clerks in a firm. It matters not which side of a problem is presented to them by a Member of Congress—they seek the information desired by that Member. I have always been led to believe that such information was compiled for the purpose of giving background material to a Member, and was not to be publicized as the opinion of the Legislative Reference Service, or even as the opinion of one of its research attorneys. Either my information is incorrect, or Congressman Budge has abused one of his congressional privileges.

In its issue of April 26, 1955, the Idaho Evening Statesman carried a story headlined "Hells Canyon Dam Hit by Solon." The story quoted from a letter purported to have been written by Idaho Senator Herman Welker to the Idaho State Reclamation Association in which Senator Welker is reported to have said, "a proposed Federal dam in Hells Canyon would make the fertile produce valleys of Idaho into dustbowl monuments." The statement is untrue, if made, and it is hoped that Senator Welker will deny it.

There are no decisions of any Federal court that have directly passed on the United States Government's right to take existing water rights from the irrigators using waters from navigable or other streams. The most recent case in the United States Supreme Court, 367 of the October term of 1954, by an FPC petitioner versus State of Oregon—the Fish Commission of Oregon, the Oregon State Game Commission—does not pass on the mooted question of the Government's right to take irrigation waters without condemnation from the water users of the several States of the United States. And in that case, the statement concerning the United States selling lands without the water rights being appurtenant is for the good reason that the several States have different laws governing the use of water. I believe there is no State where one may appropriate water and retain the right to use same without continuous proper use of such water.

Private power companies used page advertisements in leading magazines recently to attack public power. The ads stated names of the sponsors would be furnished upon request. I asked for these names ,and after several weeks received a list that covered a page as large as the page ad. This list enumerated many privately owned powerplants, including our own Idaho Power Co. Undoubtedly the money for the ads came from funds collected from us—the power users.

N. W. Ayer & Son of 30 Rockefeller Plaza, New York City, advised me that the advertisement declaring that electric power sets up a favored class in America, which appeared in the U. S. News and World Report on March 11, 1955, was sponsored by 125 private power companies including the Idaho Power Co., the Utah Power & Light Co. and the Washington Water Power Co.

The methods used by the Idaho Power Co. and its satellites in stifling and destroying the will of the people to produce public power is set forth vividly in Senate hearings, volume 12, part 48, of Senate Document 92, part 65, pages 345 to 410, of Utility Corporation Report No. 65, 70th Congress, 1st session—1927–28, Congressional Library, volume 8858, No. 2.

Legend has it that the Idaho Power Co. purchased the American Falls power rights from the Brady family for only $750,000. Yet when construction of the American Falls Dam became necessary for irrigation, the Bureau of Reclamation and the American Falls Irrigation District were required to pay $1 million for a fractional part of these same power rights.

I have special interest in this transaction because the American Falls Dam serves supplemental irrigation water to the great Twin Falls Canal Co., in which I am a landowner and holder of irrigation waters appurtenant thereto.

And now, our President steps up and tells Members of the Congress not to pass the Hells Canyon bills until the Federal Power Commission decides to give the Idaho Power Co. the right to build the low dams in Hells Canyon. The President apparently prefers his appointees in the FPC to pass on this matter rather than for the Congress to act on it as provided in the Constitution of the United States.

With great interest, I reviewed the testimony given by Lynn Crandall, of Idaho Falls, in the hearings before the Senate Committee on Interior and Insular Affairs in Washington on May 2, 1955.

I noticed particularly the comment Senator Dworshak made in prefacing a question to Mr. Crandall. The Senator said: "I know the high regard with which you are held throughout the Snake River Valley and Idaho for your diligent devotion to duty."

Mr. Crandall's knowledge of the waters of the Snake River Valley and the proper division among the many users is in reality the law of the use of the Snake River waters. For that reason the Committee of Nine has always voted to accept Crandall's theory of such operations.

Mr. N. V. Sharp, who is a resident and owns lands in the Twin Falls tract, and is a member of the Twin Falls Canal Board as well as a long-time member of the Committee of Nine, has, to my knowledge, never questioned the statements made at any time by Lynn Crandall in board meetings of the Committee of Nine. Mr. Sharp has at all times sanctioned Crandall's theory or theories of the rights of water distribution.

The only loss of water rights the Twin Falls Canal Co. has sustained where those on the Portnuf River and that because the Twin Falls Canal Board, of which N. V. Sharp has been a member for a great many years, was neglectful in seeing that others did not appropriate and make beneficial use for a long period of time of the waters that rightfully belonged to the Twin Falls Canal Co.

Mr. Crandall and the Government engineers who are testifying in these hearings are experts in their field. They have at hand dependable records on the flow of the Snake River—records based on the year-in, year-out flow over a long period of time. These records are a sound basis for estimating the river's flow in the future. They prove without any doubt that there is ample water to operate the high dam and still provide for all present and future water rights on the upper Snake.

We, who have spent the greater share of our life in developing the many resources of Idaho including reclamation and irrigation, have no concern with or about statements made by the employees of the private power companies who bray loud and long concerning some mysterious agency stealing our irrigation water rights. We consumers of power in the Snake River Valley are obliged to pay the price that the Idaho Power Co. bills us for. Our power rates are more than double those in our neighboring State of Washington.

On the subject of our high power rates, let me point out that Mr. William J. Costello, the presiding examiner at the FPC hearings, indicates the futility of allowing the Idaho Power Co. to build one or even several small dams in the Hells Canyon stretch of the Snake River. He said in his decision of May 6, 1955, on pages 24 and 25, and I quote: "We have seen how this power will have cost 6.6 mills per kilowatt-hour to produce and deliver to market, and the measure of the at-market value in the Northwest amounts to about 6 mills per kilowatt-hour. Will Idaho Power Co. be able to sell these substantial surpluses? When one realizes that Bonneville Power Administration sells large amounts of firm power at about 2 mills per kilowatt-hour it is difficult to see where in the Northwest, power in such amounts will be salable at triple the Bonneville rate."

Mr. Costello frankly admits that a Federal high dam would bring more substantial benefits to the Nation than would the low dams, but holds that there is not a reasonable likelihood that the Congress would act upon legislation to authorize the high dam within a foreseeable time.

In view of this decision it is imperative that the Congress pass legislation to save the Hells Canyon site.

So far as taxation is concerned, I desire to state that Idaho Falls having public power needs to levy only approximately 16 mills annually to operate the city. This levy provides plenty of money to build splendid public buildings, maintain golf courses, and other recreational facilities. The city of Boise, on the other hand, which is served by only private power—the Idaho Power Co.—has to levy approximately 39.7 mills to operate that city. The city of Twin Falls located only 5 miles from the great Shoshone Falls, and only 7 miles from the Twin Falls—both of which have huge Idaho Power Co. facilities—has to levy approximately 56.6 mills because we do not have public power.

Idaho is rated financially as the poorest State in the northwest division—in fact we are classed in the same category with the Dakotas, Nebraska, Kansas, and Wyoming so far as income and values are concerned. This is because we do not have cheap power. Cheap power in the West is available only to the States that have public power. In the State of Washington, the private power companies compete readily with the public-produced cheap power. The reason for this is that there has been such a tremendous volume of power produced that the power can be sold on a volume basis at a low price. Idaho may have the same treatment if we are given public power.

Following is a copy of the historical summary of the Federal reclamation laws:

The early civilization of the arid sections of North and South America was based largely on irrigated agriculture and, at the time of the Spanish explorations in the Pacific Southwest, the practice of irrigation was well established. However, during the subsequent era of exploration and conquest, irrigation on the North American Continent virtually vanished.

The history of Anglo development of irrigation in the United States commences in 1847 when Brigham Young and the Morman pioneers diverted water from the stream they named City Creek, to irrigate their gardens and fields on land now within the confines of Salt Lake City.

In 1879, Congress established the Geological Survey in the Department of the Interior and authorized surveys to determine opportunities of lands that could

be irrigated in the Western States. The Carey Act of 1894 gave additional impetus by providing aid to public land States in the reclamation of desert lands and in their settlement, cultivation, and sale to actual settlers.

However, further assistance was needed and in 1900, the major political parties both included pledges of rapid development of irrigation. President Theodore Roosevelt threw his support to the program in 1901 when he told the Congress:

"It is as right for the National Government to make the streams and rivers of the arid region useful by engineering works for the storage of water as to make useful the rivers and harbors of the humid regions by engineering works of another character * * *.

"The reclamation and settlement of the arid lands will enrich every section of our country just as the settlement of the Ohio and Mississippi Valleys brought prosperity to the Atlantic States."

On June 17, 1902, President Roosevelt signed into law the first reclamation act. It authorized the Secretary of the Interior to investigate, construct, and operate Federal reclamation projects and established the reclamation fund to be accumulated from the sale of public land in the reclamation States to serve as a revolving fund in the financing of irrigation projects. Under this basic act, the construction costs were to be repaid by the water users, and public lands on the project were to be made available under homestead laws in family-size farms.

The new reclamation program received immediate support and by 1905 water deliveries had already started on the Newlands project in Nevada. Within 10 years after the passage of the Reclamation Act, facilities had been completed by which water deliveries could be made to 1.2 million irrigable acres on 24 projects.

Since 1902, 79 Federal reclamation projects or major divisions of projects have been constructed by the Government and there are many other private irrigation projects receiving water from federally constructed works. During the 52 years since the 1902 act, 116 dams have been constructed. These include Hoover, Grand Coulee, Shasta, Hungry Horse, and other great engineering attainments. Over 5,000 miles of canals have been constructed and some of these are large enough to carry a major river. The world's longest irrigation tunnel has been constructed and put in use with the building of the Colorado-Big Thompson project and some of the world's largest hydroelectric powerplants have been constructed by the Bureau of Reclamation.

The growth of reclamation is reflected in the following figures:

Irrigable land under completed works

1906	39,300	1936	3,693,417
1916	1,405,452	1946	5,150,831
1926	3,173,570	1953	7,147,528

There were in 1953 about 125,000 family-size farms and an equal number of suburban units receiving water through reclamation projects. On the projects there were 417 towns with a population of over 1,643,000. Considering power, municipal and industrial water and irrigation, considerably more than 5 million people in the service areas of reclamation projects obtain their living directly or indirectly by reason of the project development.

CONTRIBUTION OF RECLAMATION

From this steady progress and gradual evolution to meet changing times has come a reclamation program which contributes hundreds of millions of dollars to the national economy annually. Crops harvested from federally irrigated land in 1953 were valued at $785,940,000. The cumulative value of crops produced on Federal reclamation projects from 1906 through 1953 totals $9.7 billion. More than 24.5 billion kilowatt-hours of hydroelectric energy were poured into the power systems of the Western States in 1954, bringing a return to the United States Treasury of $33,900,000, and the contribution of projects like Columbia Basin, Missouri Basin, and Central Valley are only now starting. The total of all net power revenues returned to the Federal Treasury through June 30, 1953, amounted to about $225.9 million. Net power revenues during the next 50 years from 1953 at the level of fiscal year 1954 should return an additional $1,692.5 million to the Treasury. Irrigation and municipal water repayment contracts should return $691 million, of which $108.9 million had been paid to June 30, 1953.

The stimulating effects of this crop and power production on the national economy are almost incalculable. There is no question but that it has made possible the steady flow of commerce between Eastern and Western States which, in 1951, totaled 1,544,300 cars westbound from the 31 Eastern States and 2,210,400 carloads eastbound from the 17 Western States. There were, in addition, 4,858,700 carload shipments within the 17 Western States themselves.

The total cost of project plant property for the Federal Reclamation program, as of June 30, 1953, amounted to approximately $2.4 billion. About $775 million have been appropriated from the reclamation fund toward the cost of the reclamation program. Even though, as stated above, the contribution of the larger projects is just starting, the total cost to date is only one-fourth the cumulative value of the crops produced on Federal reclamation projects and is less than the Federal tax revenues that have been received from reclamation areas which may be attributed to Federal reclamation developments.

DEVELOPMENT OF RECLAMATION POLICY

The story of Bureau of Reclamation accomplishments in the last half century is pretty much the story of the development of reclamation policy. The Reclamation Act of 1902 remains the basic legislation under which the Bureau of Reclamation operates, and the basic goal of those early days—the construction of works to provide irrigation water to the arid acres of the Western States—remains the basic objective today.

However, more advanced engineering methods, increased costs and above all, the changing and mounting demand for water for an ever-expanding agricultural and industrial economy in the Western States, all contributed to changes in Reclamation policies as enunciated by the Congress. The Reclamation Act of 1902 has been amended and supplemented by about 180 general and special acts over the past 52 years.

Probably the most important of the changes in Reclamation policies was the gradual evolution of the multiple-purpose concept by which most of the associated benefits which result from water resources development for the supplying of irrigation water are realized. At the same time, this concept makes possible a wider scope of reclamation activities including the supplying of irrigation water in some areas where a single-purpose irrigation project would not be feasible.

Thus, when the production of hydroelectric power became an important phase of the pioneer Salt River project in Arizona, the Congress in 1906 authorized the Secretary of the Interior to market the surplus power. Congress stipulated that no power privilege should be granted that would impair the efficiency of the irrigation project, thus preserving the primary purpose of the reclamation program.

Another major milestone in the evolution of Reclamation policies was the passage of the Boulder Canyon Project Act in 1928, and the resultant construction of Hoover Dam. This tremendous structure, still the world's highest dam, set the pattern for a series of great multiple-purpose projects which now utilize the water from the major rivers of western America.

From these projects are realized, in addition to irrigation, such benefits as hydroelectric power generation, municipal and industrial water, flood control, recreation, and fish and wildlife. Other benefits include salinity control, abatement of pollution, fulfillment of international obligations, improved navigation and other services.

At the same time, while these major projects were under construction, numerous smaller projects have been completed.

Repayment of construction costs by the beneficiaries has remained a basic cornerstone of the reclamation program through the entire 52 years of Federal operations. The farm water user is required by contract to repay that portion of project costs allocated for reimbursement by irrigation, although the period of repayment has been extended considerably beyond the 10 years fixed in the Reclamation Act of 1902. In accordance with policy established in 1902, no interest is charged on funds allocated to irrigation. Costs allocated to hydroelectric power and to municipal and industrial water are required to be repaid with interest and, in addition, in many projects, power and municipal water revenues are also used to assist in repayment of costs allocated to irrigation. The inclusion of revenue-producing power facilities permits the construction of projects greater in cost than the repayment ability of the irrigation water users ordinarily would allow.

Costs allocated to flood control and navigation are nonreimbursable in accordance with national policies as fixed by Congress. In some instances, costs allocated to Fish and Wildlife are made nonreimbursable under the provisions of the act of August 14, 1946.

Integrated development and operation of individual reclamation units within a watershed or basin has also gradually evolved from the expansion of reclamation activities to the multipurpose concept. The Congress, in the Flood Control Act of 1944, authorized the Bureau of Reclamation and the Army Corps of Engineers to undertake jointly the development of the water resources of the Missouri River Basin. Other acts have authorized the construction of new projects or units of projects in other river basins which are being integrated as necessary to effect the most efficient operation and extract the maximum benefits. There is close coordination among Federal agencies that have responsibilities related to water resources control and development.

At the same time, there is no disposition to usurp local control or authority. Local communities and States are always consulted in the planning of projects and operations are turned over to local irrigation districts as soon as practicable after completion. There are more than 60 projects or major divisions of projects being operated by the irrigation districts or similar organizations.

In summary, major policies which have evolved over the 52 years of reclamation history may be stated as follows:

(1) In general, water for irrigation and domestic use takes precedence over other uses.

(2) Hydroelectric generating facilities are designed and installed in all projects where feasible, with the aim of optimum production of electrical energy consistent with the priority of use of water for other purposes. Preference in power sales or leases is given to public bodies and cooperatives.

(3) The Secretary of the Interior is required to limit the disposal of water rights and delivery of irrigation water to any one landowner or entryman to not more than 160 irrigable acres. However on most projects a man and wife as owners may receive reclamation water for up to 320 ecres. This serves the purposes of providing a maximum number of settlement opportunities and minimizing speculation on lands reclaimed and made more productive through Federal reclamation projects.

(4) Facilities constructed for water resource development may serve a variety of purposes. Recognizing this, Congress has provided for construction of multiple-purpose projects wherever feasible and has adopted the principle of allocating the costs among these purposes. Project costs allocable to irrigation, but beyond the irrigation water users' ability to repay may be assigned for return from revenues from power or from furnishing water for municipal or other miscellaneous purposes.

(5) Construction costs of projects are to be returned to the United States and into the special fund in the Treasury designated as the reclamation fund, except for allocations of costs to the purposes of flood control, navigation improvement, and fish and wildlife conservation which Congress has made nonreimbursable.

(6) Reimbursement of construction costs allocated to irrigation and assigned to be repaid by the water users is to be made by the irrigation water users in annual payments to the United States and without interest. Two types of repayment contracts are provided for in general reclamation law. Under section 9 (d) of the 1939 act, the repayment period may be 40 years plus a development period not to exceed 10 years. Section 9 (e) provides for a water service type contract and repayment in a definite period of years is not required. Several individual project acts have provided for repayment periods in excess of 50 years.

(7) A definite hydrological interdependence exists among the projects within a river basin. Along with the shift in emphasis from single- to multiple-purpose projects, there has occurred a change from single local projects to multiple-unit river basin projects, such as the Central Valley project, the Missouri River Basin project, and plans for the comprehensive development of the Colorado River system.

(8) Operation and maintenance of appropriate irrigation facilities are transferred to a water users' organization whenever satisfactory arrangements can be made. Project repayment must be assured, of course, before such transfer can be made.

(9) Reclamation law should not interfere with State laws relating to the appropriation, use, or distribution of water for irrigation, or with any vested right acquired under these laws. In carrying out the provisions of reclamation law the Secretary of the Interior is required to proceed in conformity with such State water laws.

SPECIAL PROBLEMS

One of the principal problems of reclamation today relates to project economic justification and financial feasibility. It is becoming harder to find reclamation projects which qualify under the feasibility requirements of reclamation law. Yet one only has to examine the facts and figures covering some of our older existing projects, such as Salt River, Boise, North Platte, etc., to be convinced of the tremendous contribution these projects are making to our national economy. There are tremendous indirect and intangible benefits which cannot be measured in dollars and cents. Basinwide development with assistance from power revenues has permitted projects in some areas to go forward. In areas where there is no power potential, economically justified projects have not been able to proceed because they cannot pay the full cost. Under the basinwide concept the benefit-cost ratio (or comparison of benefits to the Nation to overall costs) has been used as a means for justifying units and separate segments of the project. To make matters more difficult in this problem of feasibility, the executive branch has issued instructions to the various departments relating to standards required of water resource projects. These instructions are set out in Budget Circular No. A–47. The standards and requirements which a project must meet in order to be recommended for construction are very rigid. For instance, the overall period of analysis and the repayment period have been limited to 50 years. The inclusion of indirect benefits in the economic analysis is not permitted and works for future use are prohibited unless certain rigid contract requirements are met. Very few of our good existing reclamation projects could have been built under the provisions of Budget Circular A–47.

The 160-acre limitation imposed on water deliveries as a means of assuring settlement in family-size farms has worked out exceptionally well where total irrigation supplies were to be delivered in arid areas through federally constructed works. A multitude of problems, however, have been encountered in those areas where supplemental supplies are delivered to going farms and where farms are located at high altitudes.

In the administration of repayment features of the reclamation program there is need for authority to renew and extend the water service contracting authority authorized in section 9 (e) of the Reclamation Project Act of August 4, 1939. This type of contract appears to offer the only workable plan in reimbursing the Government for complex projects like California's Central Valley project where a right to use water depends entirely upon the operation of project works. The provisions of section 9 (e) have been subjected to various interpretations and legislation is needed to clarify several points of controversy.

Another major problem associated with reimbursability is encountered in the application of power revenues in the reduction of irrigation costs. Under existing law, the so-called interest component from power revenues may be used to assist irrigation repayment. This provision has been subject to a great deal of criticism and the present administration has adopted a policy of returning interest to the Treasury.

The lack of Federal water policy, which has permitted flood control and other Federal activity to go forward on a nonreimbursable basis, while at the same time requiring reimbursement for irrigation construction, imposes inequities of operation and difficulties of administration. There is need to reassess all water conservation programs in terms of their contribution to the Nation's economy an dthe direct recognition of the place of water conservation in the development of the total resource whether it be for flood control, power, or irrigation, or other purposes.

Mr. ASPINALL. The statement of Mrs. Ethel Steel will be made a part of the record at this place. I understand Mrs. Steel will be on the witness stand this morning.

The statement of Carl C. Moore will be made a part of the record.

Is Mr. Moore present?

Mr. MOORE. Yes.

Mr. ASPINALL. And the statement of Owen W. Hurd, of Kennewick, Wash., a proponent representing the American Public Power Association, will be made a part of the record.

Is Mr. Hurd in the audience?

I believe with Mr. Hurd's statement is a short resolution. Unless there is objection, it will be made a part of the record also.

Hearing no objection, it is made a part of the record.

In conformance with the request of the Chair yesterday, the statements of Wallace J. Campbell, representing the Washington office of the Cooperative League of the United States of America; of Charles J. Fain, assistant general manager of the National Rural Electric Cooperative Association, with two short resolutions; the statement of Hon. Andrew J. Biemiller, former Member of the House of Representatives of the National Congress, representing the American Federation of Labor; the statement of O. A. Knight, representing the CIO, all of which statements were handed in yesterday in accordance with the Chair's request, will be made a part of the record at this place in the hearings.

Is there any objection?

Hearing none, it is so ordered.

(The statements referred to follow:)

STATEMENT OF MRS. ETHEL STEEL, PARMA, IDAHO

Mr. Chairman and members of the committee, my name is Ethel Steel and I am a resident of Parma, Idaho. I have lived in Canyon County since 1913. My father-in-law, John Steel, purchased our first land in that county in 1895. We still own this property—in fact, my home is located upon it. This is the same county in which Congresswoman Gracie Pfost has lived most of her life.

John Steel had always wanted a fruit farm, and he decided he wanted an Idaho fruit farm when at the World's Fair in Chicago in 1892 he saw an exhibit of apples and prunes which had been raised in the Mann's Creek area near Weiser, Idaho.

On this train trip west to look for a suitable location he was told that an irrigation project was being developed in Canyon County, Idaho, under the direction and guiding genius of Mr. J. H. Lowell. He wired ahead, and Mr. Lowell met him at Parma, my hometown, which was then nothing but a flag station.

Well, to make a long story short, John Steel became the first purchaser of land under what was called the Riverside Irrigation District. He immediately put his 80 acres into fruit, irrigating his young trees with the water the canal brought from the Boise River, a tributary to the mighty Snake. This irrigation project was financed entirely by local people, and it opened up a new era in our part of Canyon County. The project ultimately furnished irrigation water for 10,000 acres, part of them in the State of Oregon.

Mr. Lowell was the first to realize that storage was necessary to make the canal fully serve the irrigators in the district. In dry years, when the water was low there was not enough water in the Boise River to properly irrigate the land throughout the season. Mr. Lowell also realized thtat private enterprise had gone about as far as it could in financing the necessary irrigation works to make the project wholly successful. The job was too big for anyone but the Federal Government.

The farsighted Mr. Lowell was therefore in the vanguard of those pioneer western watermen who came to Washington in 1902 to work successfully for the passage of the National Reclamation Act. He then interested the United States Reclamation Bureau in financing the Deer Flat Reservoir—later named Lake Lowell in honor of the man who was the father of irrigation in that section.

Mr. Lowell's efforts to build the Deer Flat Reservoir and Arrow Rock Dam brought down on his head criticism which has a familiar ring today. Those who opposed him said it was foolish to try to produce more crops—that such production would simply create surpluses and ruin the farmers. They contended that hay, then selling for $4 per ton, would drop to almost nothing. How wrong they were. The additional crops of hay and grain attracted more livestock owners into the area, and the demand for feed soon pushed the price of hay up from $4 a ton to $7 a ton. The whole area reached a new peak of prosperity.

During all of these developments, my father-in-law continued his close association with the reclamation movement. His diary tells of a trip he made from Nebraska to Boise in 1906 as a delegate to the National Irrigation Congress. Thirty States were represented with the Vice President of the United States, Charles W. Fairbanks, as one of the speakers. Truman Palmer, of Denver, spoke

on the influence of sugar beets at the meeting, and Congressman William Reeder, of Kansas, discussed rural education as affected by irrigation.

It was into this family background, and this type of irrigation controversy, that I came to Idaho in 1913. My husband was an engineer, and his family and professional interest led him into visiting all of the existing reclamation projects in our area. I traveled with him, and my interest in the subject naturally grew along with his.

Electricity came to us at the original Steel ranch in 1913. In 1920 my husband, with an idea of irrigating the land as a pumping project, bought an additional 160 acres within the Riverside Irrigation District. Shortly after he acquired this land, Idaho Power Co. rates skyrocketed to such an extent that he could not afford to develop it. It would have been necessary to pay the power company a cool $4,000 in advance simply for putting up the poles and wire that would bring us the electricity for pumping purposes.

The growth of rural electrification cooperatives in the State, however, changed Idaho Power Co. methods of doing business to the extent that in 1946 the company was ready and willing to deliver electrical energy to new customers on farms with a downpayment only of an annual charge. We were therefore able to develop not only the 160 acres but an additional 40 acres—or a total of 200 acres—for an annual payment of approximately $400. This amount covers the cost of power used for pumping each year. The continuation of this rate, or its lowering, will depend upon other competitive power sources.

In 1930, we required electricity for use on another farm. The Idaho Power Co. contract required that we pay in cash the sum of $250. We were also asked to guarantee that during each of the first 5 years the contract was in force that we would make a minimum annual payment of $110—whether we used this much electricity or not. I want to point out that this bill was just for electricity for domestic use.

The contract also gave the Idaho Power Co. a lien on our farm with a right to foreclose at any time upon the default of the consumer, his heirs, executors, or assigns. In other words, we were asked to put a mortgage on our farm before we could get electrical service.

We hear a great deal these days about how anxious the Idaho Power Co. is to serve the best interests of the farmer. But back in the days before the competition of rural electrification, there was little evidence of this great concern for the farmer's welfare.

The Government powerplants in the neighboring States of Oregon and Washington have cast their reflections in Idaho. The effects of the REA program have spread out far beyond the immediate circle of the members of the REA cooperatives. But we have benefited little thus far in Canyon County from the Government construction and operation of power projects. We are therefore deeply interested in the construction of a Federal Hells Canyon Dam on the Snake River as proposed in H. R. 4719 which Representative Gracie Pfost has introduced.

We have everything to gain by this bill, and nothing to lose. Some people are opposing it because they say it will endanger our water rights. The canard that the United States Government, through the Congress, will take away our irrigation water rights to use the water for power and other purposes has been used by shortsighted individuals ever since John Steel's time back in 1895. It will probably be used for generations to come. Yet the truth of the matter is that not one single water right has ever been attacked in our valley—nor has there been any sustaining action in court.

Mr. Chairman, I want to make one point unmistakably clear, even though I own and operate several irrigated farms upstream from the Hells Canyon, I have no fear that my water rights will be in any way endangered should this committee and the Congress see fit to authorize construction of the high dam.

I am not alone in this, many of my friends and neighbors who are water users are as anxious as I am to see the high dam built.

We all know that the development of efficient irrigation in Canyon County and throughout the Boise Valley caused heavy yields of all kinds of crops bringing much wealth to the valley. We know that this wealth has increased our annual county, State, and Federal tax revenues, that everybody has profited by it. We believe the construction of the high Hells Canyon Dam will bring a far greater degree of prosperity to us all.

STATEMENT OF CARL C. MOORE, LEWISTON, IDAHO

Members of the committee, my name is Carl C. Moore. I am a farm-machinery dealer in Lewiston, Idaho. I am today speaking for myself and also on behalf of the Lewiston area membership of the Idaho-Oregon-Washington Hells Canyon Association. I also am stating the views of the Farmers Union, Local No. 429, and the Central Labor Council of Lewiston, which represents 28 affiliated unions, and the views of the Idaho rural electric cooperatives. We favor the passage of H. R. 4719, and at the earliest possible date. This legislation would provide full comprehensive development of an especially good site and would make possible the full development of the lower Snake River. In other words, the Hells Canyon site is the key to full development of the lower Snake River. Technical witnesses no doubt have presented facts showing that the Snake River floods in late spring and early summer and has a comparatively low flow in other times of the year. A high dam at Hells Canyon, as provided in the legislation now before you, would provide the storage to level and control the flow of the river below that point. The benefits to be derived from leveling of the stream flow are many. Power production, navigation, and flood control are probably the most important. I would like to discuss the matters of navigation and power production. The Corps of Engineers has prepared plans for four dams on the lower Snake River between Pasco, Wash., and Lewiston, Idaho. In that distance the river drops 400 feet so 4 dams and locks with a lift of 100 feet each are needed. Obviously these dams are not feasible as a single-purpose navigation project but with storage upstream these dams can provide both navigation and firm power. Without upstream storage navigation benefits can still be provided but power can be produced only on a more nearly run-of-the-stream basis which would greatly decrease the value of the power produced. I was indeed pleased to hear of the action of this House and the Senate to appropriate funds to start construction on Ice Harbor Dam. Certainly this is a commendable action.

However approval of the high dam at Hells Canyon would greatly enhance the value of Ice Harbor Dam and would be a vital factor in establishing feasibility of the other three low dams between Ice Harbor and Lewiston. According to reports of the Federal Power Commission (Document FPC P26 dated January 1, 1953) the Snake River is one of the few streams left in America where there are available uninhabited canyons where engineers can build dams with large upstream storage reservoirs sufficient in capacity to actually shift the peak flow of the river from one period to another during the year. I can state that I have been in Hells Canyon and that the damage caused by a large storage reservoir there would be negligible. There are no railroads, highways, or towns to be relocated. Here we have a great natural storage site at an elevation which is high on the river so that the water stored here can be used and reused many times as it moves to the sea when released. A site such as this is a great natural resource comparable to large deposits of oil, natural gas, or coal. Improper development of the site would destroy this natural resource just as surely as would fire destroy a large coal deposit. Full development as a storage site would provide a continuing source of wealth for this generation and generations to come. Destruction of this site, by incomplete and improper construction, would be an inexcusable waste of a natural resource. No nation, however rich in resources, can afford to deliberately waste and destroy wealth. We must conserve, protect, and develop for full use those resources which have been given us. The low-cost energy which would be produced by water stored back of a high dam at Hells Canyon would strengthen and develop the entire Pacific Northwest and this Nation. Bear in mind that power would be produced not only at Hells Canyon but at every dam now in place or later constructed between that site and the Pacific Ocean.

I respectfully and urgently urge your favorable action on H. R. 4719 now before you.

STATEMENT OF OWEN W. HURD, EXECUTIVE VICE PRESIDENT, AMERICAN PUBLIC POWER ASSOCIATION, IN SUPPORT OF CONSTRUCTION OF HELLS CANYON DAM

Mr. Chairman and members of the committee, my name is Owen W. Hurd. I am a resident of Kennewick, Wash. I am here to present the following brief statement for the American Public Power Association in support of identical bills H. R. 4719 by Pfost, H. R. 4730 by Green, H. R. 4739 by Magnuson, and H. R. 4740 by Metcalf.

Although I am here as an officer of APPA representing more than 800 publicly owned electric utilities throughout the Nation, my own interest in these bills is increased because I am a resident of the State of Washington and manager and chief engineer of the Benton County Public Utility District, serving an area located at the confluence of the Snake and Columbia Rivers. I am therefore fully aware of the importance of maximum development of the power, navigation, flood control, and irrigation benefits of Snake and Columbia Rivers.

It was my privilege to participate as a witness for the National Hells Canyon Association in its intervention in the application of the Idaho Power Co. for a license to construct three low dams on the Snake River, conflicting with the proposed Federal high Hells Canyon Dam.

Our national association at annual membership meetings practically every year since 1952 has by resolution opposed the plans for partial development of the Snake River by Idaho Power Co. At our most recent annual meeting on May 5, 1955, a resolution was unanimously adopted in support of S. 1333, which is identified to House bills enumerated above. As a part of my statement I wish to include this resolution.

Time did not permit the inclusion of this resolution before the Senate hearings on S. 1333. However, Mr. Radin, our general manager, was permitted to have inserted in the record of these hearings a previous resolution of the association on Hells Canyon and a statement he presented at the FPC hearings in opposition to the partial development plan of Idaho Power Co.

To us the record is crystal clear that the best interest of the people of Idaho, the other Northwest States and the Nation would be served by the Federal construction of the high Hells Canyon Dam.

Although it would be needlessly repetitious at this time to recite in detail our reasons for this conclusion, I would like to point out that there is an abundance of evidence that the high dam provides to the people of the area and the Nation the utmost in power development, flood control, navigation, recreation, irrigation, and fish and wildlife.

As the manager of a power system serving 8,500 consumers and representing here today a national organization whose members serve a substantial segment of the Nation's electric consumers, I am, of course, most conscious of the additional benefits of the high Hells Canyon Dam from the standpoint of power development.

The figures on the added benefits of this dam, as opposed to the structures proposed by the Idaho Power Co., are startling. The total prime capacity contributed to the Columbia River system by Hells Canyon at site and at downstream projects now existing or authorized would be 1,122,000 kilowatts. By contrast, the 3-dam plan of the Idaho Power Co., according to the Federal Power Commission examiner, would provide only 505,000 kilowatts of prime energy, while Brownlee, the single dam recommended by the FPC examiner, would provide only 221,000 kilowatts. In other words, the high Hells Canyon Dam, because of its larger installed capacity at site and its greater storage, would provide 617,000 kilowatts more power than the 3-dam plan, and 901,000 kilowatts more than the single dam recommended by the examiner. To give you an idea of the magnitude of this difference, may I point out that the 617,000 kilowatts of greater power capacity of the high Hells Canyon Dam represents about 100,000 kilowatts more than the entire capacity of Bonneville Dam.

The failure of the Federal Government at this time to authorize the high Hells Canyon Dam is of the utmost importance, for it could well set an important precedent in Federal policy toward resource development—a policy which could result in segmentizing and decimating sound regional, comprehensive development. Such a policy would not only reduce the benefits which can be extracted from the falling waters of the river systems of the Nation, but could endanger the very existence of the local publicly owned electric utilities. Under such a new and retrogressive policy, many local public agencies and rural electric cooperatives would be forced to purchase energy from the private companies standing astride the river at all-important storage sites. The ability of these nonprofit systems to expand and pass on the low cost of public energy in the form

of lower rates to their consumers would gradually be lessened. The competitive element would be minimized, tending toward a general upsurge in power rates all over the country.

The decision to be made in connection with the Hells Canyon Dam could be a bellwether in deciding the manner of future development of our natural resources. Impending upon the decision of the Congress in authorizing the construction of this project, we could continue to go forward nationally with a program carefully and painstakingly developed over a period of half a century, and which has sought to bring about the maximum of benefits for the maximum number of people in the development of our natural resources. Or, in the face of the alternative presented by lack of congressional authorization of the high Hells Canyon Dam, this case could well mark the initiation of a policy in which we content ourselves with only partial development of our resources, with the benefits being channeled into the hands of a fewer rather than a larger number of people.

In the best interests of our national welfare, we urge you to authorize the construction of the high, multipurpose Hells Canyon Dam.

RESOLUTION NO. 14—HELLS CANYON DAM

Whereas the Hells Canyon issue, like the Muscle Shoals struggle of 30 years ago, involves the right of the people to develop their rivers for the greatest good of the general public; and

Whereas the Idaho Power Co. is proposing to develop only about 60 percent of the waterpower potential in the Hells Canyon reach of the Snake River; and

Whereas the Federal construction of Hells Canyon Dam provides for the maximum comprehensive utilization of the Hells Canyon Dam site for flood control, river regulation, and power: Now, therefore, be it

Resolved, That the American Public Power Association reaffirms its endorsement of Federal construction of Hells Canyon Dam.

Resolution adopted May 5, 1955, at APPA convention, Jacksonville, Fla.

STATEMENT OF WALLACE J. CAMPBELL, DIRECTOR WASHINGTON OFFICE, COOPERATIVE LEAGUE OF USA, IN SUPPORT OF THE CONSTRUCTION OF HELLS CANYON DAM

My name is Wallace J. Campbell. I am director of the Washington Office of the Cooperative League of the USA. The Cooperative League is a federation of consumer, service, and purchasing cooperatives across the Nation, serving more than 2 million farm and city families throughout the United States.

A very large part of our membership is made up of farm-supply cooperatives which have a direct economic stake in the proposed high-level Federal dam at Hells Canyon. The other members of our association, which own other types of co-ops, also have a stake as consumers in this project. The league is also proud to have in its membership the National Rural Electric Cooperative Association with nearly 4 million members. NRECA will be testifying separately on this issue. Our largest member organization is the Credit Union National Association with 8 million members in the United States and Canada.

Mr. Chairman, anything less than the proposed Federal high dam would be unsatisfactory. The canyon is the largest remaining natural resource for power, irrigation, navigation, and recreation on the face of this great Nation. If we are to permit a spite dam to be built on this mammoth natural resource, we are denying future generations the vast benefits of efficient development.

And I want to make one point clear before I get into one aspect that deeply concerns us. The alternative to the high dam is either completely contrary to the administration's policy of "partnership with local interests" or the partnership policy is just a blind for the real policy: that of promoting a nationwide private utility monopoly. The Idaho Power Co. is, in fact, incorporated in the State of Maine. Its principal stockholders likewise are not in Idaho—nor even Oregon or Washington—but in Boston, New York, and Philadelphia.

Besides that, it is a vicious private utility. It has killed off its competition, mostly rural electric cooperatives, and has a record to prove it. We should recognize a wolf in sheep's clothing. A partnership is an intimate relationship which should be entered into only with very great care.

Our members have a direct and intense concern in the high Hells Canyon Dam. Not only will the project serve the Pacific Northwest directly, it will have an important economic effect on the lives of another 2 million farmers as far east as Ohio.

The largest phosphate deposits in this country are in the Pacific Northwest. They cannot be efficiently developed without low-cost power. Our farmer co-op members have been waiting for nearly 10 years for this power. They have invested over $2.5 million in preliminary phosphate development in Idaho. They are ready to invest another $15 million in plants to process raw phosphate.

The reason they have invested so much money and are fighting for low-cost power is obvious. They could save from $15 to $23 per ton on fertilizer. They expect to produce a minimum of 275,000 tons a year. This means a savings of $5 million a year. This does not include freight. Most phosphate they use today—and they are using as little as one-tenth of what they need—comes from Tennessee and Florida.

To illustrate the intensity of feeling with which these co-op members express their concern, I would like to insert into the record the following resolutions.

Midland Cooperatives, Inc., with 335,000 members in Minnesota, Wisconsin, and Iowa, declared in its resolution March 29–30, 1954:

"Midland region farms require increasing quantities of commercial plant food each year. Present supply sources involve much greater transportation costs than are necessary, particularly in the case of phosphate fertilizers.

"Higher analysis phosphate can be produced economically from Idaho deposits, in which many Midland region cooperatives own an interest through Midland Cooperatives, Inc. This fertilizer production is most feasible with fair-priced electric power. No such power is available.

"A high dam at Hells Canyon in the Snake River would provide the necessary power at fair prices. Proposals of Idaho Power Co. for building smaller dams would not. Neither would the utility proposals insure full development of the natural resources of the river itself. The Hells Canyon Dam would permit full development.

"We urge the Interior Department to resume its previous support for construction of a high dam at Hells Canyon, urge the Federal Power Commission to reject the Idaho Power Co. plan and ask Members of Congress from the Midland region to support our position by public announcement of their stand and positive action in Congress."

In a supplementary resolution December 6–7, 1954, Midland Cooperatives, Inc., declared:

"Food producers in the Midland region are greatly increasing their use of fertilizers. They consume 10 times as much as they did 10 years ago. They indicate further rapid increases in demand.

"The plant-food industry is not building rapidly enough to supply the foreseeable demands for nitrogen and phosphates, and it may have difficulty providing enough potassium chemicals.

"Until now, Midland region has depended on Florida for raw phosphate supplies. Long freight hauls on this low-analysis product increase food-production costs, either raising food prices or lowering yields to food producers who must use this plant food.

"Three developments are vital to insuring adequate supplies of fertilizer in this region at fair prices.

"1. Western phosphate deposits must be developed at faster rates. Cooperatives working on this have pooled capital nationwide to do their part.

"2. Electric power must be produced in Western phosphate areas in greater quantities. Efficient use of the water resources requires multipurpose dams, so wise power generation is beyond the capacity of either power cooperatives or profit-type utilities. A Federal high dam on the Snake River offers the best possibility, and we urge Federal construction of a high dam at Hells Canyon.

"3. Improved storage and distribution systems are essential. We urge member cooperative associations to quickly join in the Midland program of bulk fertilizer spreading, bulk transport, and adequate financing for year-around farm use of plant foods."

The Ohio Farm Bureau Cooperative Association, in speaking for 115,000 families served by 88 local cooperatives, said in their annual meeting in December 1954:

"The construction of the proposed Federal dam at Hells Canyon on the Snake River in Idaho will make available a source of low-cost electric power. There exists in this area vast phosphate rock deposits which could be most economically developed only with low-cost electric power. Such phosphate rock deposits could be manufactured into phosphate fertilizer to the benefit of everyone. It would result in lowered production cost and a more abundant and nutritious food supply. The Hells Canyon Dam project would also be self-liquidating.

"It is our understanding that the alternate proposal will not supply sufficient power nor a low enough rate to be competitive in the development of high-grade phosphate fertilizer.

"We therefore urge the Federal Power Commission and the Congress of the United States to support the proposed Hells Canyon Dam project and to oppose the alternate proposal for the construction of smaller dams."

The Utah Cooperative Association, serving 8,400 members, declared in its resolution adopted March 6, 1954:

"We realize the basic importance of immediate development of our sources of supply of phosphate fertilizer to supply nearly 2 million Western and Midwestern farmers. Since farm cooperatives have already invested $2½ million in preliminary phosphate development in the State of Idaho, in which program the Utah Cooperative Association has a substantial interest; and since low-cost electric power in adequate supply is the only practicable means of development and processing of phosphate rock into fertilizers; and since Hells Canyon on the Snake River is the only feasible power dam site near our cooperative deposits of phosphate in south Idaho, we favor speedy construction of a high dam in Hells Canyon for the maximum development of power and with full protection of water and irrigation rights as outlined by the United States Army Engineers in Report 308. We deplore any obstruction of this plan for a high dam at Hells Canyon as not being in the public interest and as being particularly contrary to the interests of farmers."

Central Cooperative Wholesale in Superior Wis., serving 128,000 members in Minnesota, Wisconsin, and Michigan, April 12–13, 1955, declared:

"Scientific application of fertilizers is becoming more essential to successful farming in our area.

"The plant-food industry is not building rapidly enough to supply the foreseeable demands for nitrogen and phosphates, and it may have difficulty providing enough potassium chemicals. Long freight hauls on this low-analysis product increase food-production costs, either raising food prices or lowering yields to food producers who must use this plant food.

"This 38th annual meeting of Central Cooperative Wholesale recognizes that western phosphate deposits must be developed at faster rates. Cooperatives working on this have pooled capital nationwide to do their part. To meet growing demand for plant foods, we urge our Government to recognize that electric power must be produced in western phosphate areas in greater quantities. Efficient use of the water resources requires multipurpose dams, so wise power generation is beyond the capacity of either power cooperatives or profit-type utilities. A Federal high dam on the Snake River offers the best possibility, and we urge Federal construction of a high dam at Hells Canyon."

The largest of the member organizations, the Consumers Cooperative Association in Kansas City, Mo., serving 460,000 families in Nebraska, Kansas, Iowa, Oklahoma, South Dakota, Missouri, Colorado, North Dakota, and New Mexico, declared at its annual meeting in December 1954:

"CCA and its member cooperatives, through the Central Farmers Fertilizer Co., have an interest in phosphate lands in Idaho. An ample supply of low-cost electricity, such as could be produced by the proposed Hells Canyon dam on the Snake River, is essential to the production of high-analysis phosphate fertilizer from these lands. Ample electricity for this purpose could save Midwest farmers millions of dollars in freight and be the source of millions more in increased crop production.

"The Hells Canyon offers, moreover, one of the finest remaining dam sites on the North American Continent. Construction of the proposed Federal dam there would be consistent with this country's half-century-old policy of conservation and development of natural resources.

"Therefore, we urge that Congress enact legislation at this coming session to authorize the immediate Federal construction of Hells Canyon Dam."

In the Pacific Northwest, the Pacific Supply Cooperative, with 70,000 members in Washington, Oregon, Idaho, and Montana, declared its overwhelming support in the following resolution adopted in November 1953:

"Realizing the basic importance of immediate development of our sources of supply of phosphate fertilizers for the fertilizer needs of nearly 2 million western and midwestern farmers, and because farm cooperatives have already invested $2½ million in preliminary phosphate development in the State of Idaho, and by reason of the fact that farm cooperatives stand ready to invest a minimum of $15 million in equipment and facilities for the processing of their raw phos-

phate in which program Pacific Supply Cooperative has substantial interest, and

"Whereas cheap electric power in adequate supply is the only practicable means of development and processing of phosphate rock into fertilizers, and

"Whereas maximum development of our resources upon the Columbia and Snake Rivers is vital to the future economy and welfare of the people of the Pacific Northwest, and

"Whereas Hells Canyon is one of the largest potential reservoirs available for upstream storage of water for power in the Pacific Northwest, and

"Whereas Hells Canyon is the only feasible power dam site near our cooperative deposits of phosphate in south Idaho: It is now, therefore,

"*Resolved, at Pacific Supply Cooperative annual meeting assembled at Portland, Oreg., this 18th day of November 1953*, That we do favor speedy construction of the Hells Canyon high dam as an integral unit of the comprehensive plan for maximum development of the Columbia and Snake Rivers with full protection of water and irrigation rights, as outlined by the United States Army engineers in its 308 report, and we do deplore any obstruction of the United States Army Engineers' plan of river development as not being in the public interest and as being particularly contrary to the interests of our farmers."

The Farmers Union Central Exchange which serves 250,000 members in Minnesota, Wisconsin, and South Dakota, Montana and Wyoming, restated their support of the development of the Hells Canyon Dam and other resources March 2, 1955:

"Through the development of our natural resources many benefits have been brought to the people of the United States, such as the generation of electric power, recreation and wildlife, and soil conservation. These hydroelectric generating facilities have brought to our people, through the rural electric cooperatives, electric power that would otherwise have never been available.

"Therefore, we recommend that the Congress of the United States continue to appropriate funds for the development of such other natural power resources of this country, including Hells Canyon Dam in Idaho and the power and navigation development of the St. Lawrence River in cooperation with Canada."

These merely illustrate the positions taken by the cooperative associations. Some of the other regional associations are testifying before your committee. Resolutions by additional groups were not readily available when this testimony was prepared, but could be made available for the record.

The Cooperative League, which includes many other cooperative organizations in its membership, declared at its latest Congress in Chicago, October 25–27, 1954:

"Whereas efficient use of the water resources of the Nation requires multipurpose dams, beyond the capacity of either cooperative or profit-type utilities to construct and operate in a wise and comprehensive manner; and

"Whereas the construction of the proposed Federal dam at Hells Canyon on the Snake River, a part of which forms boundary between Idaho and Oregon, will make available a source of low-cost electric power; and

"Whereas there exists vast phosphate rock deposit within the regions adjacent to the proposed Hells Canyon hydroelectric project which could be most economically developed only with low-cost electric power; and

"Whereas such phosphate rock deposits could be manufactured into phosphate fertilizer to the benefit of the general public in the production of more abundant and nutritious food supply; and

"Whereas such development would be self-liquidating: Now, therefore, be it

"*Resolved*, That this Congress of the Cooperative League of the USA directs its staff to continue their efforts with the Congress of the United States, the Federal Power Commission and if necessary in the courts, in support of the Hells Canyon Dam project and in opposition to alternate proposals for construction of smaller dams."

Your committee and the Federal Power Commission hearings which preceeded are rich with testimony of a technical nature about the development of these great phosphate deposits. The industrial development, which would follow the pioneering of Central Farmers Fertilizer Co. and the Western Fertilizer Association, owned by the cooperatives, would undoubtedly bring additional industrial development into the area. The Bonneville Power Administration estimated in June 1952 that this development would eventually bring $150 million in private industrial facilities into the area, using 500,000 kilowatts and employing about

5,000 men directly, creating jobs in service industries of another 5,000 and adding to the payrolls, mainly in Idaho, over $30 million a year.

As explained to the committee earlier, the process of converting raw phosphate rock into triple superphosphate by the sulfuric acid method is not satisfactory. Electroprocessing of phosphate by electric furnace can produce a concentrated fertilizer containing 60 to 65 percent phosphate, compared to the 43 to 45 percent strength with the sulfuric acid methods. Even at its best, only a small percentage of the deposits can be used by the sulfuric acid method.

Studies by the United States Bureau of Agricultural Economics show midwest and western farmers are now paying $15 to $34 more per ton for phosphate plant food than they would if high-analysis fertilizer were available to meet the demand.

Much has been said about the possibility of the Idaho Power Co. providing power for development of these deposits. Efficient processing calls for a rate of between 2.5 and 3 mills per kilowatt-hour which would be readily available from the Hells Canyon project. At the present time none of Idaho's phosphate shale is being converted into fertilizer by the electric furnace method because industrial power rates of 6 and 7 mills per kilowatt-hour which prevail in the Idaho area make electric furnace fertilizer economically impossible.

In summary, our farmer-members of cooperatives in States as far east as Ohio have a great economic stake in the development of a high-level dam at Hells Canyon and have stated affirmatively, and at times dramatically, their desire that this project go forward as quickly as possible.

There are a couple of additional factors which should be brought to the attention of the committee which affect the interests of the consumers and the Nation as a whole. Depletion of natural phosphate content of the soil by constant cropping requires replacement of this vital growth ingredient in increasing amounts. United States farmers have increased phosphate fertilizer consumption by 300 percent in the last 20 years, but even this has not offset the amount drawn from the soil. The phosphorous elements in food are essential for the health and welfare of human beings. And yet the outlook is for a diminishing availability of this plant food unless the 60 percent of the Nation's deposits which are in the area served by Hells Canyon are developed. If the demand is not met, declining productivity of American agriculture, diminished food output and a poorer Nation will result.

There are several bugaboos which have been implanted in the minds of many Americans and many of the Representatives in the Congress by expensive advertising on radio and television, the slick magazines, newspapers, and other media. The first is that multipurpose projects such as the proposed Hells Canyon Dam are so costly that the Nation cannot afford them. The hydroelectric developments in the TVA, the Bonneville, Grand Coulee, and other places, have convinced our membership that these projects not only pay out their own cost completely in a reasonable period of amortization; they enrich the country through higher productivity and higher incomes for the people. They provide also substantial increases in revenue to the United States Government through sharply increased income-tax returns. These factors combine to make projects like the high-level dam at Hells Canyon completely in the public interest.

A final bugaboo has been the idea planted deliberately and maliciously—that projects of this kind are contrary to the American way of life, are subversive to the welfare of the people, and are the expression of an idealogy foreign to all the things we hold dear. As you can see by the resolutions we have quoted, our farmer members are not scared by epithets or slick propaganda. We believe that projects of this kind are in the public welfare and the public interest, and that high-level Federal dam proposed for Hells Canyon is one of the greatest opportunities for serving the needs of our people and adding a great new industrial potential to our economy.

When we approach the problem on a cold business basis, we cannot justify getting a trickle of benefits when the Nation as a whole needs the full benefits from Hells Canyon. The question is, Should we add immeasurably to the prosperity of the Nation or add handsomely to that of private monopoly which opposes an economy of competition and abundance? The issue has been before the people for a long time. It has won and lost elections. The people want full development, and it seems to us the Government is obligated to fulfill that need.

STATEMENT OF CHARLES J. FAIN, ASSISTANT GENERAL MANAGER, NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION, IN SUPPORT OF H. R. 4719, PROVIDING FOR THE AUTHORIZATION OF HELLS CANYON DAM

Mr. Chairman and gentlemen of the committee, my name is Charles J. Fain. I am assistant general manager of the National Rural Electric Cooperative Association, which is the national service organization for approximately 90 percent of all REA electric-type borrowers in the United States and Alaska.

Our association has traditionally encouraged and supported construction, by the Federal Government, of multiple-purpose river-basin development projects where they are feasible and where the hydroelectric power from them can be marketed to preference customers in accordance with the established principles of Federal power marketing policy. This association has long been on record favoring Federal construction of a high-head dam at the Hells Canyon site, and we testified in support of legislation authorizing this project during the 82d Congress, 2d session. Since that time, as an intervenor before the Federal Power Commission, we have testified in opposition to an application of the Idaho Power Co. for a license to build three smaller hydroelectric projects near the Hells Canyon site which would preclude development of the high-head Federal project. Our membership has consistently, by resolution, opposed the effort of the Idaho Power Co. to take for itself the benefit of the Hells Canyon site and has urged Congress to authorize the Federal project.

During the 1952 hearings before the Subcommittee on Irrigation and Reclamation of the House Committee on Interior and Insular Affairs, and during the extended hearings before the Federal Power Commission on the license application of the Idaho Power Co., the engineering and technical aspects of both the private and Federal plans for development of the Snake River have been exhaustively discussed and argued.

We are of the opinion, however, that there are four salient arguments in favor of Federal development of the Hells Canyon site which have not been shaken by 3 years of argument and attack.

First, the preponderance of opinion and evidence indicates that the Federal plan for a high-head development at the Hells Canyon site would develop substantially more power than would the 3-dam proposal of the Idaho Power Co. or the one-dam proposal of FPC Examiner William J. Costello.

Second, the proposal for Federal development would provide substantially greater amounts of flood control and power storage than would the proposal of the Idaho Power Co.

Third, and probably most important, the Federal plan of development would reserve for use by the people of the Northwest one of their greatest remaining undeveloped natural resources whereas the Idaho Power Co. plan would divert the benefits of this resource to the corporate stockholders of the company.

Fourth, the power developed under a Federal construtcion and marketing plan would be made available to public utility districts, municipalities, rural electric cooperatives, and other preference agencies in accordance with established Federal power policy.

THE NEED FOR ADDITIONAL POWER IN THE NORTHWEST

The Bonneville Power Administrator predicted, in his advance program, 1954, that in the period 1954–55 through 1960–61, the Federal generating facilities now in operation, plus those under construction, will enable the area to serve all firm loads, but during any critical water period, steam electric generation will have to be used, and interruptible industrial loads curtailed. Subsequent to the installation of the last generator at the Dalles Dam, scheduled for 1961, the hydroelectric resources of the Federal system will remain at a constant level. Energy requirements, however, will continue to mount. The Bonneville Power Administration also stated, in transmitting to the Secretary of the Interior his advance program, 1954, that,

"Because of the very large Federal investment in power facilities in the region, these Federal facilities will, for some time to come, be the largest single factor in the power supply of the region * * *. Each new multiple-purpose project should be built and operated, regardless of ownership, as part of an integrated regional power system. Requirements of general area service should be envisioned in planning future extensions to the regional high voltage grid in order to adjust resources to loads most efficiently."

The Administrator stated, in his report, that after balancing foreseeable loads with presently scheduled generation, he found that firm loads will exceed the

prime capability of the west group of the Northwest power pool by over 200,000 kilowatts during the 1961–62 season, and that by 1963–64, the power deficit will be 800,000 kilowatts. This potential 800,000 kilowatts shortage does not, he said, include consideration of the existing 400,000 kilowatts interruptible industrial load, steam displacement, or any large expansion of electro-chemical or electro-metallurgical industries. The Administrator estimated that, during the next decade, from 1 to 3 million kilowatts of new capacity could be sold to new industrial customers, even if the power rate exceeds to some extent the present Bonneville rate of 2 mills per kilowatt-hour at a 100 percent load factor.

In our opinion, Mr. Chairman, the conclusions of the Bonneville Administrator, Dr. Pearl, a noted engineer, represent the result of careful study. They fully establish the need for immediate authorization and construction of large blocks of additional hydroelectric capacity in the Northwest, and make it almost mandatory to avoid the waste inherent in any plan for only partial development of remaining sites.

NEEDS OF THE RURAL ELECTRIC SYSTEMS IN THE NORTHWEST

Statistics published by the Rural Electrification Administration show that the total energy input of all rural electric systems in Oregon, Washington, Idaho, and Montana, increased from approximately 61.6 million kilowatt-hours in 1943 to 858 million kilowatt-hours in 1953. This is a fourteenfold increase during a 10-year period—1,300 percent. Between 1950 and 1954, the loads of the rural electric systems in Washington, Oregon, Idaho, and Montana nearly doubled, from 440 million kilowatt-hours per year to 860 million kilowatt-hours per year. This trend is equivalent to a uniform annual increase of 18.2 percent. There is every evidence that this trend will continue which means that, if the present trend continues, by 1970 the rural electric systems in the Northwest will be serving a load of approximately 10.85 billion kilowatt-hours per year.

The rural electric systems of the Northwest are seriously concerned lest their growth and development be curtailed by a shortage of low-cost hydroelectric power which, because of high fuel costs, is the lifeblood of the rural electrification program and the lifeblood of the entire economic pattern of the area.

MORE POWER FROM FEDERAL DEVELOPMENT OF HELLS CANYON

During the more than 1 year of expert technical testimony before FPC Examiner William J. Costello on the application of the Idaho Power Co. for a license to build 3 hydro-electric projects to replace the Federal project, no less than 8 well-known engineers, representing all parties involved, submitted 40 separate estimates of the prime power which would be available from the proposed Federal high-head Hells Canyon Dam as contrasted with that which would be available from the 3 dams proposed by the Idaho Power Co. The average of their opinions for various conditions of length of drawdown period, additional irrigation acreage, and other conditions, results in a figure of 940,000 kilowatts of prime power available from the Federal high-head dam, compared with 598,000 kilowatts of prime power that would be available from the company proposal. The plan recommended by the FPC examiner would provide only 221,000 kilowatts of prime capacity.

This means that the Federal dam would produce approximately 342,000 kilowatts more prime power than would the company proposed scheme and 719,000 kilowatts more prime power than the single dam recommended by the examiner.

During the FPC hearings, the experts also ventured 26 separate opinions with respects to the amounts of average energy that would be available from the high-head Hells Canyon compared with the 3 dam proposal of the power companies. The average of these expert opinions indicates that, on the average, approximately 5.26 billion kilowatt-hours of energy would be available annually from the high-head Federal project, compared to 4.92 billion kilowatt-hours from the company proposed and 2.01 billion killowatt-hours from the single dam plan of Examiner Costello. All of this additional energy would be economically feasible of development. FPC Examiner Costello, in his finding No. 153, said:

"If the assumption were made of financing, construction, and operation of either the high dam or the 3-dam plan by the Federal Government, the high-dam project in the 1-dam plan would make possible the production of the maximum amount of economical power and, according to the comparison made by the staff, the value of the power increment which would be provided by the 1-dam plan over the 3-dam plan would be greater than its cost (cf. staff proposed finding No. 20)."

Therefore, we feel there is a clear superiority for the high-head Federal Hells Canyon project with respect to overall quantities of both power and energy available. Either the three-dam proposal of the company or the single-dam proposal of the FPC examiner would, if put into effect, waste a large part of the value of the Hells Canyon site.

However, the superiority of the high-head Federal project does not end with a bare comparison of the amounts of prime power and average energy that will be available from it compared to the company proposal. One of the most important factors, in our opinion, is that the Federal project would be interconnected and operated as an integral part of the comprehensive plan for development of the Columbia River Basin, while the dam proposed by the company would be at best "coordinated" with the Federal plants in the Pacific Northwest. The degree with which the company would "coordinate" the operation of its plant or plants with downstream Federal projects would, in large measure, determine whether or not the Government could utilize for power production at its downstream plants the limited storage capacity made available by the company's proposed Brownlee project. It is entirely possible that under actual operating conditions, the three proposed power company projects—even if indeed all three would be built—would be operated in such manner as to produce substantially lesser quantities of downstream power and energy than have been estimated to be available from them.

FPC Examiner Costello said in his findings Nos. (138) and (139):

"(138) The transmission facilities proposed for the high-dam project appear to be adequate for a fully integrated operation with the Federal Northwest system including flows of power to and from the project area.

"(139) The transmission facilities proposed for the three-dam plan are not designed for a fully integrated operation with the Federal Northwest power system and there has never been any proposal or suggestion that the applicant would engage in such an integrated operation."

THE FEDERAL DAM WILL PROVIDE FAR GREATER UPSTREAM STORAGE BENEFITS

There seems to be little controversy concerning the fact that the Federal high-head dam at Hells Canyon will provide 3,880,000 acre-feet of usable storage whereas either the 3-dam proposal of the company or the single dam plan put forward by Mr. Costello would provide only 1 million acre-feet of usable storage. The construction of additional upstream hydroelectric projects with substantial reservoir storage capacity is of extreme importance to the continued efficient operation of the Federal power system in the Northwest. Again referring to the advance program, 1954, the Bonneville Power Administrator stated therein that:

"One of the most economical sources of power for the Pacific Northwest is additional headwater storage to firm up downstream plants. The importance of storage reservoirs on the Columbia River arises from the river's flow characteristics, as well as the region's dependence on hydroelectric energy. At run-of-river plants such as Bonneville, generating capability is at a peak in summer when the flow is high, but power loads are lowest. Higher system capability can be obtained by building upstream reservoirs that will store water in summer when flows are high and release it in the winter when flows are low."

Mr. Costello, in his findings Nos. (72) and (74), stated:

"(72) The high dam project was planned as a key upstream storage project in the main control plan; it would contribute appreciably to the objective of the main control plan."

"(74) The high dam project power facilities would be interconnected with the regional transmission grid and integrated with the Federal Columbia River power system. The high dam project or any other storage project in the middle Snake could be so interconnected as to take advantage of the diversity of flow between the Columbia and the Snake, thus making full power use of the water resources."

Obviously the Federal plan is far more beneficial with respect to upstream water storage characteristics.

The Federal Government has a total investment of $2,478,200,000 in 12 multiple-purpose projects and transmission facilities in the Pacific Northwest. Approximately $1,754,600,000, or 71 percent of the total of this figure, is allocated to power. It seems incomprehensible to us that the Congress, having authorized the expenditure and appropriated funds for this investment, largely in downstream projects, will now reverse its position and allow private utility companies to appropriate the sites reserved for upstream reservoir storage projects. It

is our opinion that the private utility companies in the Northwest realize that they can, in a large measure, gain control over the power production of the downstream Federal projects by appropriating the headwater reservoir sites for their own use.

HELLS CANYON POWER WOULD BENEFIT MORE PEOPLE

On the subject of serving the public interest, Mr. Costello said, in his finding No. (168):

"The three-dam plan of the applicant would not serve the public purposes and promote the public interest in the same way as the high dam project might under governmental auspices, but this is not to say that the applicant's plan would not serve public purposes and promote the public interest."

Under the proposed legislation, H. R. 4719, power from the Federal Hells Canyon Dam would be marketed in accordance with the Bonneville Project Act of 1937 (16 Stat. 832), which provides preference in the availability of such power to municipalities, public utility districts, and rural electric cooperatives.

In the Northwest, the preferred agencies probably serve a higher proportion of the total population than in any other area except the State of Nebraska and the Tennessee Valley.

Power marketed from the high head Federal project could be marketed at $17.50 per kilowatt per year—the present BPA rate. That is the equivalent of from 2 to 3½ mills per kilowatt-hour. Power from the three-dam company plan would have to be sold at 6.69 mills per kilowatt-hour to pay out costs. The rate from the single-dam plan proposed by Mr. Costello would have to be 7.6 mills per kilowatt-hour.

It is our opinion that by the time the Hells Canyon project can be placed in operation, the preference customers now served by the Bonneville Power Administration will require an appreciable portion of additional power to meet expanding load. If the Idaho Power Co. is allowed to appropriate the Hells Canyon site for its own use, and if other large Federal hydroelectric projects are not started in the immediate future, the preference customers in the Pacific Northwest face the prospect of an acute power shortage within 10 years, and would presumably be forced to rely for supplemental energy on traditionally unfriendly power companies or upon their own fuel generation. The latter would compare most unfavorably, in this high-cost fuel area, with the cost of power from the Federal system.

Moreover, it is no more than reasonable to suppose that if the company is allowed to proceed with its proposal, large potential benefits available from the Snake River, which have been contemplated as ultimately contributing to the overall benefit to cost ratio of the Columbia River Basin development program, will be diverted from the people of the Northwest, largely wasted without proportionate additional benefit to the shareholders of the Idaho Power Co. We feel that the Congress, in considering authorization of the Hells Canyon project, must give full consideration to the fact that failure to authorize the Hells Canyon project may allow a private utility company to appropriate for its own profit the resources of a navigable river basin which we think the Congress holds in trust for the use of all of the people.

WHO WILL PAY FOR HELLS CANYON DEVELOPMENT?

The Bureau of Reclamation estimates that approximately 95 percent of the entire cost of Hells Canyon would be allocated to power and repaid to the Treasury of the United States at 3 percent interest within 50 years after the eighth generator is installed. The cost of the necessary facilities to integrate the project with the existing Bonneville transmission system would also be entirely reimbursable and rapaid to the Treasury over a 50-year period at 2½ percent interest. Thus, the money appropriated from the Federal Treasury to build the high-head Federal Hells Canyon project would not be a cost to the Federal Government, but would be an investment in a type of facility which has proven its repayment ability.

The FPC examiner, Mr. Costello, corroborated the Bureau's payout estimates in his finding No. (155):

"The high dam project apparently would pay out its reimbursable costs with interest within a 50-year period, i. e. amortization of the Federal investment allocated to power, together with costs of operation and maintenance."

Moreover, subsequent to full amortization after the 50th year of repayment, the Government would enjoy income from the project sufficient to repay its

cost a second time within a second 50-year period. In other words, the people who use the power will pay for the project in 50 years and then the Government will have an asset, debt free, still worth probably as much as the dam will cost.

Now let us examine the proposal of the private utility companies for construction of the project. Cost estimates for construction by the company of the project. Cost estimates for construction by the company of its 3-dam proposal vary between 129 and 176 million dollars. The company claims that these funds will be provided by private capital without cost to the taxpayers of the United States. As of Tuesday, July 12, 1955, however, the Idaho Power Co. had pending before the Office of Defense Mobilization applications for rapid depreciation certificates which would allow the company to depreciate, over a 5-year period, for income-tax purposes, $35,944,000 of total cost of the proposed Oxbow development, and $67,138,000 of the proposed cost of the Brownlee development. In other words, Mr. Chairman, of the estimated 129 to 175 million dollar construction costs of these 2 projects, the company has already filed with the United States Government a request that it be allowed to depreciate $103,082,000 of their value within a 5-year period.

Assuming that the certificates are granted in the amount of 65 percent of the requested amount (the percentage allowed Washington Water Power on the Cabinet Gorge hydroelectric plant), the tax savings accruing during the 5-year rapid amortization period would amount to $31 million.

It appears to us, Mr. Chairman, that claims by the company of being ready and able to finance construction of its proposed partial development of the Snake River by private financing are open to serious question in view of the proposed subsidy the company is seeking in accelerated depreciation certificates. Actually the Federal Government, if such are granted, will subsidize more than the entire construction costs under the proposal of the Idaho Power Co. By contrast, the Federal plan of construction calls for repayment over a 50-year period of 95 percent of the total cost of the project, including 100 percent of that portion of the cost allocated to power. Presumably, during the succeeding 50-year period, the Government would receive sufficient revenue to repay the cost of the project once again. From a purely financial aspect, we can conceive of no possible advantage to the Government in subsidizing private construction of the project as opposed to Federal construction.

ADEQUACY OF STREAMFLOW

There has been considerable criticism, Mr. Chairman, of the high-head Federal Hells Canyon project based on allegations that the streamflow of the Snake River would be insufficient to operate the project over a period of years. The critics point out that the rights of the local people to future consumptive use of the water of the Snake River for irrigation purposes must be protected against infringement by the Federal Government for power operations at the proposed Hells Canyon Dam.

It is my understanding that, in general, rights to the consumptive use of water for irrigation purposes take precedence over rights for power purposes.

Moreover, section 2 of the present bill, H. R. 4719, specifically provides that operation of Hells Canyon Dam shall not conflict with present and future rights to use of water for irrigation or other consumptive uses, whether these rights be now or hereafter existing.

In addition, Mr. Chairman, the FPC examiner, Mr. Costello, states, in finding No. (116) of his decision:

"With ample allowance for all foreseeable upstream irrigation water uses, a dependable water supply can reasonably be expected for the efficient and economic operation of the high dam project during its payout period."

We feel, Mr. Chairman, that there is, therefore, little reason to foresee a situation in which there will not be adequate water to operate the project or circumstances under which the rights of the local people to the beneficial consumptive use of the water for irrigation purposes will be adversely affected.

SUMMARY

In summary, Mr. Chairman, allow me to reiterate that the rural electric systems throughout the country, especialy those in the Pacific Northwest, are wholeheartedly in support of construction by the Federal Government of the high-head Hells Canyon project proposed by the Bureau of Reclamation provided the marketing of power therefrom would be in accordance with the preference principles of Federal power legislation. It is our opinion that the Federal project

will provide significantly more prime capability and more average annual energy than either the company plan or the single dam plan.

The additional capacity and energy will be badly needed because the area will be experiencing an acute power shortage by the time Hells Canyon can be completed. The large reservoir storage capacity of the Federal project, as contrasted with the relatively small storage capacity of the privately proposed project, would spell security for the Government's existing $2 billion investment in downstream multpile-purpose projects, and would help to maintain the ultimate feasibility of the overall development plan for the Columbia River Basin system.

The argument is frequently made by commercial utility companies that under their plan for construction of hydroelectric projects, the income from the properties is subject to the Federal income tax, whereas the revenues accruing to projects built by the Federal Government is not. From this premise, the companies draw the conclusion that private construction means increased Federal income taxes from the area.

We believe this to be a false conclusion. The income tax of a given area depends on the overall income of the inhabitants rather than on the income of any one private or corporate taxpayer. In areas where the Federal Government has undertaken large-scale development of hydroelectric facilities, major industrial, agricultural, and economical development has followed. This development broadens the overall tax base of the area served. The incomes of existing inhabitants increase and new incomes, stemming from stimulated economic development, so broaden the tax base as to overshadow the small increment of increased Federal income tax that would have been made available from a single corporate income under commercial utility company development.

Finally, the obvious attempt of the Idaho Power Co. to secure Federal subsidization of its proposed plan through the issuance of rapid tax amortization certificates indicates to us that the company anticipates and expects the taxpayers of the country to lend it appreciable financial assistance if its plan is approved. By comparison, construction of the federally proposed project would cost the Government less than nothing in that 95 percent of its total cost, including all cost allocable to power, will be repaid within a 50-year period, and it will still have the asset.

The available evidence indicates to us that the streamflows of the Snake River will be adequate to operate the project without interfering with beneficial consumptive use of water for irrigation. We sincerely hope that the subcommittee will favorably report H. R. 4719 authorizing construction of the high-head Federal dam at the Hells Canyon site.

Mr. Chairman, I would like to submit for the record the attached copies of Resolutions Nos. 5–B and 5–G which specifically urge construction by the Federal Government of the Hells Canyon Dam. These resolutions were unanimously adopted by the 13th annual meeting of members of this association on February 17, 1955, in Atlantic City, N. J.

RESOLUTION No. 5–B

Unanimously adopted by the 13th annual meeting of members of the National Rural Electric Cooperative Association, February 17, 1955

Whereas long-established Federal power policy, embraced in the basic resource laws of the land for over 50 years calls for the full development of the people's resources; and

Whereas the full development of the water resources of the Columbia River Basin requires the construction of a high dam at the Hells Canyon site on the Snake River: Now, therefore, be it

Resolved, That the rural electric systems strongly endorse the Morse-Neuberger-Pfost bill authorizing a Federal high dam at Hells Canyon; and be it further

Resolved, That we urge the authorization of Hells Canyon Dam at this session of the Congress and the appropriation of adequate funds to get construction underway immediately; and be it further

Resolved, That we condemn the compaign of the Idaho Power Co. to seize control of the middle Snake River in order that it may construct three small dams which would result in the waste of approximately half the power potential of that area.

RESOLUTION No. 5-G

Whereas there are a great number of hydroelectric projects throughout the United States for the development of low-cost electric power; and

Whereas these projects are needed to meet the requirements for electric power in the Nation; and

Whereas there is a need for the acceleration of the program of conservation and control of our rivers for power, irrigation, flood control, and other benefits which are essential for the prosperity of the Nation: Now, therefore, be it

Resolved, That we urge Congress to appropriate necessary funds for planning and constructing multiple-purpose hydro projects meeting the standards laid down for feasible multipurpose dam construction, and by way of illustration, including the following dams among others: Jim Woodruff, Niagara, Big Bend-Missouri River Basin, Oahe, Glendo, Yellowtail, Fryingpan-Arkansas, Table Rock, Keystone, McGee Bend, Greers Ferry, Eufala, Hells Canyon, Ice Harbor, Libby, Hartwell, Upper Columbia, Buford, Colorado River storage project, John Day, and Passamaquoddy; be it further

Resolved, That Congress enact the necessary legislation to assure the people that development of hydroelectric sites solely for power-production purposes, by commercial utilities, or non-Federal agencies may be undertaken only when such development will not interfere with ultimate comprehensive river-basin development, which because of size and complexity of purpose should be properly undertaken by Federal agencies; be it further

Resolved, That we urgently request Congress to appropriate necessary funds for transmission facilities to integrate river-basin project power facilities, and delivery of power to the load centers of preference customers; be it further

Resolved, That rights of preference customers, under the Flood Control Act of 1944, be recognized, and that preference customers be advised that power is available and their needs met before contracts or interim agreements are made with commercial utilities for disposal of power from various power projects.

STATEMENT OF ANDREW J. BIEMILLER, MEMBER NATIONAL LEGISLATIVE COMMITTEE AMERICAN FEDERATION OF LABOR

My name is Andrew J. Biemiller. I am a member of the national legislative committee of the American Federation of Labor. I appear today on behalf of that organization to urge speedy enactment of H. R. 4719 which will authorize construction of the Hells Canyon project by the Bureau of Reclamation.

The 1953 Convention of the American Federation of Labor adopted a resolution in support of the multiple-purpose Hells Canyon Dam. This position was reaffirmed by the 1954 convention.

The resolution reads in part:

"Whereas the construction of Hells Canyon multiple-purpose dam is a vital step in the full utilization of the power potential of the Columbia River watershed, and has already been endorsed by the Washington State Federation of Labor, Oregon State Federation of Labor, Idaho State Federation of Labor, Washington State Grange, Oregon Farmers Union, Oregon State Grange and similar groups with a public interest viewpoint in Washington, Oregon, and Idaho; and

"Whereas engineering studies under the competent direction of John S. Cotton have clearly established the prime desirability of the Hells Canyon multiple-purpose dam over any other proposed site or combination of sites; and

"Whereas failure to proceed with the multiple-purpose dam by allowing construction on conflicting sites will mean not only higher cost power, but also the irrevocable loss of some 600,000 additional low cost firm kilowatts which would materially retard the economic development of the entire Pacific Northwest: Therefore be it

"*Resolved*, That the American Federation of Labor in convention assembled, support public agency constructed of a multiple-purpose, full-utilization dam at the Hells Canyon site."

Mr. Chairman, on May 6, 1955, the presiding examiner of the Federal Power Commission issued a challenge to the Congress of the United States to resume the national program of comprehensive development of its rivers.

In summing up the record of more than a year of hearings on the Idaho Power Co.'s three-dam application, together with briefs of all parties to the case,

this is what the FPC examiner had to say for his ultimate conclusion on the merits of the Federal Hells Canyon Dam versus the private proposal for development of the Middle Snake River:

"* * * The facts seem to point to the inescapable conclusion that with the marked and substantial advantage of the Goverment's credit, the high dam would be dollar for dollar the better investment and the more nearly ideal development of the Middle Snake."

This conclusion, and the many specific findings which the examiner adduced to reach it, has vindicated the long fight that the American Federation of Labor, other organized labor, farm, public power, cooperative and citizens groups from the Pacific Northwest and all over the Nation have waged to save the great Hells Canyon damsite for maximum development which will serve all the people.

But the examiner has refused to recommend Federal development as provided under the Federal Power Act because he does not believe Congress will act. But we in organized labor believe that this is not so. We believe that now that the overwhelming superiority of the high Hells Canyon Dam has been conclusively demonstrated, that the Congress will now legislate for the best interests of the Nation and authorize construction of the Hells Canyon Dam.

Organized labor in the Pacific Northwest and all over the Nation has a vital interest in the kind of development that takes place on our rivers. This interest can be best expressed by one word—jobs. The basic problem which our country faces and will continue to face is providing a continually expanding economy with new jobs for new additions to the labor force as our population continues to increase and additional hundreds and thousands of persons leave rural areas every year to seek work in larger towns and cities.

We cannot maintain full employment at high wages unless there is new plant investment in manufacturing to provide year-around payrolls and absorb the young people who will in a shorter time and in greater numbers than some of us realize, be demanding work. It must be remembered, too, that surrounding a dynamic economy, based as ours is on manufacturing, are the construction and building activities, the service industries, small business and professional activities, which come into being as a result of the foundation of industrial payrolls having been laid.

The kind of economy under which we operate must have tremendous supplies of new energy to feed it properly. In 1952, the President's Materials Policy Commission predicted that by 1960, the power requirements of the United States would be 131 percent greater than in 1950, representing a rate of increase of about 8.5 percent annually. But the demand for power in the Pacific Northwest has already exceeded this forecast. Customers of the Bonneville Power Administration in 1954 purchased 9.3 percent more electric energy from the Federal Government than in 1953.

One of the greatest factors which will make it necessary to accelerate the development of energy is the growth of electroprocess industries—a growth which will place even more acute demands than ever before upon power sources to maintain it. In 1950 these industries consumed 19 percent of all power purchased by industry and 11 percent of all the Nation's power production. By 1975 the President's Materials Policy Commission predicts that they will require 30 percent of industrial powerloads, and 17 percent of the total for all uses. This means that electroprocessing will up its consumption 452 percent in 25 years, while national power use will rise 260 percent.

It is important to make clear that aluminum, magnesium, titanium, and other light-metal industries, the expanding chemical industry, the development of phosphate deposits for farm fertilizer and industrial use, all require not only abundant but low-cost electric energy. For power is such a large proportion of the aggregate unit cost of production that an increase of even a mill per kilowatt-hour can affect the entire economics of the industry.

The spectacular growth of the Pacific Northwest has been founded on low-cost power development. Its continued growth will depend upon a firm construction schedule for new power development. The present administration has not seen fit to propose any new Federal starts of large hydro projects in the Columbia Valley since it assumed office in 1953. This situation must be remedied immediately for unless this policy is reversed the Columbia region is faced with a serious energy shortage which can have the most adverse effects upon its economy and its future growth. It is high time that such projects as Hells Canyon be speedily authorized and Federal money be obtained through appropriations to begin construction without delay.

New low-cost power from the great hydroelectric potential of the Columbia, Snake, and other streams in the region is the only means by which new industry can be attracted to the region. There are no oil, no gas, no coal deposits to provide an alternative source of energy. Furthermore, the kind of overall planning on a regional basis that is embodied in the joint comprehensive development blueprint of the Corps of Army Engineers and the Bureau of Reclamation must be adhered to. Low-cost energy should be developed in amounts ahead of demand, and the full potential of the region's falling waters harnessed, by an integrated system of dams and reservoirs creating power which will be transmitted over a geographical transmission grid at wholesale Bonneville rates, lowest in the Nation. By this means new industry will be attracted which would otherwise locate elsewhere.

By 1963 the population of the Columbia Basin will have increased an estimated 1.5 million, or about 31 percent. Assuming the same proportion as at present in total employment, this means that about 500,000 new jobs must be found in the region during the next decade if its growth of the last 13 years is to be maintained. It also means that more than 10,000 new manufacturing jobs must be found each year.

This provides a challenge to the Congress of the United States to proceed with the self-liquidating multiple-purpose projects such as have already proven their worth so conclusively—Grand Coulee, Hungry Horse, Bonneville, Chief Joseph, and McNary. Hells Canyon, one of the last great natural dam sites in the Nation, a project which will not only produce nearly 700,000 kilowatts at site, but add the capacity of another Bonneville Dam to the downstream dams through its storage releases, should be gotten underway without further delay.

The Northwest, even in the lower Columbia areas which have benefited most from low-cost power developments is still prevented from coming fully into its own by the lack of a diversified economy. It depends in greatest measure upon lumbering and agriculture to survive. But neither of these two industries can be expected to absorb any large proportion of the new job seekers of the next 10 to 25 years.

Construction will provide new jobs only as long as the rest of the economy is healthy. In the Snake River Basin of southern Idaho and eastern Oregon the situation is especially acute, as to date selfish interests have locked the door against Federal river and power development and its benefits have never been made possible. Accordingly Idaho and eastern Oregon lag far behind other areas in economic activity and suffer every year from the plague of seasonal variations in employment which harmfully reduce earning and purchasing power of workers which in turn adversely affects the entire community.

Per capita income in Idaho is far less than the national average, and below her sister States of Oregon and Washington. Its population growth, too, is far less than that of Oregon and Washington and somewhat less than the Nation as a whole. There is no reason why a State which ranks among the first half-dozen in hydro potential and possesses other tremendous resources of minerals and land should continue to scrape along at bare subsistence. We believe it is possible for such projects as Hells Canyon to provide the sparkplug for its economic development.

The question of liberating new sources of low-cost energy in the Pacific Northwest and the Nation as well is bound up in the Hells Canyon issue. The issue is clearcut. It is one between full development of the river resources which rightfully belong to the people for new jobs, payrolls, industries, and a better life, and the outmoded and discredited single purpose, service area development which will not only sacrifice the full range of the benefits which can be derived from the Snake and Columbia Rivers, but will probably raise power rates so that no real economic expansion can be assured the region.

The hopes of the working people of the Pacific Northwest are resting upon the Congress of the United States to save Hells Canyon Dam site and the great power potential of the Columbia River system for its fullest possible development, and with it the fullest possible range of multiple-purpose uses in flood control, navigation, reclamation, and recreation.

The decision at Hells Canyon can be made only once. The American Federation of Labor urges this subcommittee and the full House to act for the people to develop for them their great river systems, and never allow them to fall into the hands of monopoly. Prompt passage of H. R. 4719 will demonstrate that the long history of resource development in the public interest which has brought into being the Tennessee Valley Authority, Hoover, Shasta, and Fort Peck Dams, and the great power projects along the Columbia, is and will continue to be the basis on which the Nation will move rapidly ahead to develop low-cost

energy for continued economic opportunity for wage earners, small business, and industry.

There is no need for confusion on this great issue. We have seen what can be done by observing what has been already done. Hells Canyon and what it represents, must prevail so that we can realize the full industrial potential of this area, so essential to a dynamic expanding economy and the defense of our country, and so important to our goal of a constantly rising standard of living for the American people.

We trust this subcommittee will recommend H. R. 4719 for passage, that the Interior and Insular Affairs Committee will concur in the recommendation and the House pass the bill promptly.

STATEMENT OF O. A. KNIGHT, VICE PRESIDENT, CONGRESS OF INDUSTRIAL ORGANIZATIONS

The CIO wishes to express its appreciation of the opportunity to appear before this committee in support of H. R. 4719, H. R. 4730, and H. R. 4740, bills to authorize the construction, operation, and maintenance of the Hells Canyon Dam.

The National CIO has supported fullest development of the Columbia River for many years. In 1945 the CIO came out for fullest development of a number of river basins in this country as part of a program known as the Murray plan.

In 1949 we published a proposal along this line entitled "The Magnificent Columbia."

We are convinced that these bills are among the most important bills before Congress today. Along with the bill authorizing the Colorado River storage project, which we are supporting, we feel that the authorization of Hells Canyon is a necessary next step in the country's river-basin program.

The CIO stands firmly for certain basic principles guiding the Nation's resources activities. All of these are embodied in the bills under consideration. These principles, applied to the Columbia River Basin, require the following:

In the first place the Federal Government should go forward with the comprehensive development and use of the Columbia River, including its tributaries, according to the plan which has been approved a step at a time by Congress providing the broadest benefits of the river to all the people for purposes of reclamation, irrigation, power, navigation, recreation, wildlife, and all other beneficial uses.

In the second place, this Columbia Basin plan should include the maximum utilization of the hydroelectric power resources of the basin, including a sound system of major storage reservoirs and generating stations integrated and coordinated both hydraulically and electrically.

In the third place, the plans for marketing the power should assure the people of the region an abundance of power at the lowest possible electric rates to stimulate both residential and rural use of electricity and the further development of industry based on the region's wealth of resources.

In the fourth place, the plans for marketing the power should include delivery to load centers through Federal transmission facilities, and a preference to public and cooperative electric systems as provided by every Federal power marketing law enacted by Congress since 1906.

In the fifth place, the power marketing plan should include provision for direct sales of Federal power to large industrial consumers to assure the basic industry which serves as a key to sound regional economic expansion, and the programing of sufficiently large blocks of new power to meet the needs of expanding industry as well as the growth requirements of systems distributing to rural and urban communities.

The fundamental issue at stake in the Hells Canyon project controversy is whether this Nation intends to adopt a long-range policy of scientific resource development, or prefers haphazard, opportunistic exploitation. The first means that, if we act intelligently, we can obtain the greatest sustained yield from our renewable resources, and thereby perform one of the operations essential to preserving national strength and growth over a long period. The other means underdevelopment, waste, a deteriorating standard of living, and eventual decay of our modern scientific culture. Unless we manage our resources wisely we shall inevitably join the long procession of dead civilizations.

Now the first immediate issue as we see it involves the additional capacity and energy which the high dam project will provide. This may be summarized as follows:

(1) A high Hells Canyon Dam means increase of electric generation potential in all downstream generating facilities, because of the 4 million acre-feet storage capacity, as against 1 million acre-feet of storage in the Idaho Power Co. project. The additional power capacity is essential as a defense measure. We have examined the evidence placed in the record of hearings before the Federal Power Commission on project Nos. 1971, 2132, and 2133 and have concluded that the weight of evidence supports the conclusion that this project will add approximately 1,120,000 kilowatts of prime power to the Columbia Basin system when developed according to plans as compared with only about 675,000 kilowatts of prime power which would be added by the inferior proposal of the Idaho Power Co.

(2) The evidence in the Federal Power Commission hearings also supports the conclusion that the prime power available as a result of the high Hells Canyon Dam would actually provide the integrated Columbia Basin power system with about 1,450,000 kilowatts of salable firm power at 75 percent load factor, with reasonable allowance for diversity and transmission system losses. This compares with a corresponding total of only about 875,000 kilowatts of salable firm power from the Idaho Power Co. projects.

This raises the first immediate issue which Congress will decide in favor of conservation by enacting S. 1333. The CIO holds that it would be derelict to its duty to the workers and farmers of the Pacific Northwest and the Nation as a whole if it failed to say with emphasis, we as a people cannot afford to sacrifice more than a half a million kilowatts of low-cost power capacity to the demands of private power monopoly.

On a 75-percent load factor basis, this 575,000 kilowatts of additional capacity which will be available to the Northwest if the high Hells Canyon project is authorized, would provide annually nearly 3½ billion kilowatt-hours of low-cost electricity to meet the needs of the region. This is not opinion. It is engineering fact. And, in view of the fact that the high Hells Canyon project is at least as economical per unit of output as the Idaho Power Co. three low-dam alternative, it would appear difficult to justify action which would forever deprive people of this block of energy.

This additional power and energy means more jobs, more business, more prosperous farming, more regional development, a healthier national economy in the future. I will discuss this important fact further after a brief word on the economy of the high Hells Canyon Dam power.

Let us consider for a moment this second issue, the issue of low-cost power as a stimulus to healthy regional development and higher living standards. Again we have recourse to our review of the testimony in the license proceeding before the Federal Power Commission, supplementing information placed in the record by Interior Department witnesses in previous congressional hearings.

Our conclusions from this review may be summarized as follows:

(1) On the basis of the entire investment necessary to make this power available, including transmission facilities and additional generators at other dams made possible by Hells Canyon storage, the high Hells Canyon Dam will contribute power to the Columbia Basin system at between $19 and $20 per kilowatt-year as a Federal project. This compares with a cost of between $32 and $36 per kilowatt-year for the power which the Idaho Power Co. three-dam alternative project would contribute to the Pacific Northwest.

(2) Even assuming Federal construction of the three-dam alternative project, the cost of power per kilowatt would be slightly more than the cost of high Hells Canyon power, and the large additional power available as a result of the high dam project would certainly swing the balance to the latter project so far as the interest of the region and the Nation is concerned.

(3) The difference in cost per kilowatt-year means a difference between electrical energy for from 3 to 3½ mills per kilowatt-hour for the high Hells Canyon project and between 5 and 5½ mills for the Idaho Power Co. three-dam alternative.

(4) This difference between about 3 mills and about 5 mills in the rate at which energy from this great hydroelectric power resource can be sold means the difference between encouragement and discouragement of the location of certain electro-process industries using the mineral resources of the region. Of major importance, in this connection, are the great phosphate resources located within transmission distance, which could be transformed into low-cost phosphate fertilizers for the farmers of the West if a 3-mill rate for power makes possible use of the electrofurnace process.

The decision of Congress on this bill to authorize Federal construction, operation and maintenance of the high Hells Canyon Dam, as a key project in the

Federal Columbia River Basin program therefore involves far more than the issue of public versus private development of a single site on the Snake River tributary of the Columbia River.

It involves convenience for city and rural homes, jobs for industrial workers, prosperity for farms, and, more generally, the future expansion of the regional and national economy based upon the fullest possible use of our resources.

In terms of development of this single Federal project, as contrasted with the inadequate development proposed by the Idaho Power Co., authorization of the Federal high dam will mean ultimately at least 50,000 more jobs, $180 million more in annual payrolls, and about $525 million more in annual products, according to Bonneville Power Administration ratio of jobs to kilowatts.

But this measures the effect of just a single project. If the decision on Hells Canyon is recognized as a key policy decision involving the future of the Columbia River Basin program, then vastly larger gains or losses in employment and industrial output are at issue.

The present situation is largely the result of the shift from unified development of the Columbia River Basin, with the power marketed through a Federal transmission grid, to local responsibility for power development, with private power companies playing the chief role.

Now, there is expert testimony in the Federal Power Commission hearings on the Idaho Power Co. application for a license, indicating that private development is always less complete development—less hydro out of a given river because private demand for high profits limits what proves out economically.

In New England, for instance, where the Federal Power Commission estimated that public development of the rivers would provide more than 3 million additional kilowatts of hydroelectric power, the New England Council reported that on the basis of private development there was only 500,000 kilowatts that could be economically developed.

But we do not need to assume such extreme differences. All we need do is take Hells Canyon as a sample. I have, as I have already pointed out, what I believe to be well-supported figures, showing that the people of the Pacific Northwest will get only about 60 percent as much power out of this site if it is developed in accordance with the Idaho Power Co. plan instead of the Federal high-dam plan.

Let me apply that ratio to the 30 million kilowatts which the Federal Power Commission estimates is still to be developed from the country's greatest power river system, the Columbia.

The answer is that, if Federal Power Commission authorization of Idaho Power Co. development of the Hells Canyon site is to establish a pattern of piecemeal, mainly private, development for the future, the region and the country may lose something like 12 million kilowatts of low-cost hydroelectric power that might otherwise be developed.

That ultimate possible loss from a change of policy would be about 20 times as great as the loss of salable firm power from failure to develop the high Hells Canyon project alone.

But, conservatively assuming an eventual loss of only 10 times that resulting in substitution of the Idaho Power Co. for the Federal Government at Hells Canyon, the loss to regional development and full employment in the United States would be tremendous. To put the results of such a change of policy simply:

Failure to enact this bill, authorizing Federal development of the high Hells Canyon Dam, as a sign of changed policy, will threaten the loss of at least half a million jobs in industry and trade as part of the region's development;

Failure to enact this bill, authorizing Federal development of the high Hells Canyon Dam, as a sign of changed policy, will threaten the loss of at least $1.8 billion in annual wages in industry and trade as a part of the region's development;

Failure to enact this bill, authorizing Federal development of the high Hells Canyon Dam, as a sign of changed policy, will threaten the loss of over $5 billion in annual products as a factor in both regional and national development.

The expansion of our economy, whether we look at it from a regional or a national viewpoint, is closely tied to the availability of low-cost electric power in abundance.

This was emphasized in the June 1952 report of the President's Materials Policy Commission, entitled "Resources for Freedom." In the foreward to volume III, emphasizing the strong interrelationships among energy resources, the Commission says:

"Equally important, it [the Commission] wishes to stress the basic importance of ample, low-cost energy, along with technology, as the foundation on which industrial growth is built and a prime essential in supporting national security."

In chapter 4 of this volume, the Commission indicates that to support a doubling of the Nation's output of all goods and services in the 25 years 1950 to 1975 the demand for electric energy may be expected to increase 2½ times. This means, it says, a demand for 1,400 billion kilowatt-hours around 1975, as compared with 389 billion kilowatt-hours generated in 1950. It continues:

"The country has enough of all energy resources—waterpower, oil, gas, and particularly coal—to support a rise in electric energy supply of this magnitude. The major question is whether the supply will, in fact, be expanded rapidly enough and without a rise in real costs."

The Commission discusses the question of cost of future power with particular reference to effect on the country's economic growth, as follows:

"The general economic objectives of keeping costs of all materials as low as possible applies with particular force to electricity, because it enters into the cost of practically all goods and services produced in the economy and into the budget of nearly every family. Even though electricity typically represents only a small fraction of total production costs for most items, a substantial increase in its real costs, reflected in correspondingly higher prices to industrial and other consumers, could have a considerable retarding effect on economic growth. The impact would be particularly serious upon the electro-process industries, which thrive because of low-cost electric power and upon which the United States must depend heavily for solving some of its difficult materials problems * * *."

This emphasizes the importance of prompt enactment of S. 1333 which would authorize construction, operation, and maintenance of the Hells Canyon Dam, particularly as it will indicate the intention of Congress to go forward with such programs where they are necessary to assist in building regional support for increased population or in bringing down excessive electric rates.

And let me reemphasize the view of the CIO that each year's advance in our economic life brings out more clearly the fact that abundance of low-cost power is a key to future expansion which is necessary to assure full employment for industrial and commercial labor as well as prosperous family-size farms. It is a well-known fact that the power industry's most optimistic forecasts of electric power requirements are always being exceeded.

Actually the Paley Commission forecast of 1.4 trillion kilowatt-watts output of electric energy by the year 1975 has already been rendered out-of-date by the rise in our population, our productivity, and our standards of living. This is evidenced by the forecasts of the Electrical World, trade journal of the electric industry, in its issue of September 20, 1954. On the basis of thorough analysis of the important trends in American economic life it predicts that utility output of electricity will reach the 1.4 trillion kilowatt-hour level 5 years earlier and that the total output in 1970, including plants owned by industries, will be about 1.5 trillion.

Projecting the country's demand for electricity further, the General Electric Co. speaks of prophecies placing the figure at 5 trillion kilowatt-hours by the end of the century.

Such figures reveal the tremendous importance of a power policy which will provide the abundance of low-cost power necessary to meet the expanding needs.

It is the CIO opinion that the time has come for the American public and for Government, to give full and serious consideration not only to the immediate needs but to the long-range needs, especially in the field of power. Power is esential. As citizens of the country we have attempted to the best of our ability to take a look at the overall picture of the present utilization of our power resources such as water, and to the needs of the future, and on that basis we have given strong support to the full utilization of our rivers for that purpose.

We feel that S. 1333 is of great importance as part of a sound Federal power program. But we also favor this bill as we favored the Colorado River storage bill because it will assist in providing more irrigation works for development of the arid lands of the West. It has been Federal reclamation policy since the 1st decade of the 20th century that irrigation water and electric power should work hand in hand for the development of the arid States, establishing the basis for homesteading as well as industrial development. The two purposes combined have been recognized as an essential team in pulling the economic load of irrigation where water is hard to come by and would otherwise flow in great eroding floods, wasted to the sea, while dust storms ruin millions of acres.

The CIO has supported the high dam at Hells Canyon for a number of years on the basis of a careful review of the engineering documents and other material

submitted by the Bureau of Reclamation. We have checked it against material offered by critics of the proposal and have found that the Bureau's engineers have been guided by a true sense of responsibility for comprehensive river basin development for all purposes looking to the best development of the West.

In this connection we have been particularly impressed by the way in which their testimony in the recent proceeding before the Federal Power Commission supported the high Hells Canyon project in spite of the fact that the policy of the Department of the Interior had shifted with respect to the issue between this key project in the Columbia Basin program and the Idaho Power Co. counterproposal. We were also impressed by the way in which the testimony of Interior Department engineers and other experts stood up against the efforts to break them down.

It was through careful study of engineering, economic, and statistical information from the same Bureau of Reclamation source, applying the same criteria that we applied in the case of Hells Canyon, that led us to the conclusion that we had been wrong in opposing the Echo Park project in the Colorado River storage plan. We saw that proposed alternatives would not meet the requirements of the Government's obligation to the people of the region and we did not hesitate to change our position when all the facts were before us.

The CIO feels that development of the West, its agriculture and its industries, using to the full its great resources, is tremendously important to the Nation's future. We are convinced that sound Federal river basin programs will play a major role in this development.

We, therefore, urge that Congress act favorably on H. R. 4719 in order that the Federal Hells Canyon project may be undertaken as the next important step in the development of the Pacific Northwest.

Mr. ASPINALL. Now will the members from the area concerned who have not put statements in the record but who are here and wish to testify and whose names have not been called please stand, if there are any others?

(Three gentlemen stood.)

Mr. BUDGE. These gentlemen are in opposition.

Mr. ASPINALL. I am calling for the proponent witnesses at this time.

As I understand it, there are no others.

Mrs. PFOST. Mr. Chairman?

Mr. ASPINALL. Just a minute, please.

The Chair has in his possession several resolutions in the form of letters and resolutions which have been examined by our staff member, Mr. McFarland, who states there is no repetition among them although they are similar in nature. These are from those representing interests favorable to the legislation.

Is there any objection to making these a part of the record at the end of the proponents' testimony?

Mr. BUDGE. Reserving the right to object, Mr. Chairman, I assume that we should incorporate in the same request permission for me to do the same thing with the statements which I have here this morning.

Mr. ASPINALL. The Chair was going to make that request following this, with that understanding, but if you wish to include your request, the request is that like statements, like telegrams, like resolutions from those opposing the legislation will be accepted and made a part of the record of the hearings at the end of the testimony of those appearing in opposition. Is there any objection?

Hearing none, it is so ordered.

Now the Chair recognizes the gentlewoman from Idaho, Mrs. Pfost.

Mrs. PFOST. Mr. Chairman, I have here some statements from Idaho people who have sent a copy of statements they would have given had they been able to be present. I ask unanimous consent that they be incorporated in the record at this point.

Mr. SAYLOR. Reserving the right to object.

(A short pause.)

Mr. ASPINALL. Does the gentleman withdraw his objection?

Mr. SAYLOR. Yes.

Mr. ASPINALL. Hearing no objection, it is so ordered.

(The statements referred to follow:)

STATEMENT ON HELLS CANYON BILL BY EDWARD EMERINE, BOISE, IDAHO

My name is Edward Emerine. I am publisher of the Idaho Farm Journal and the Boise Journal, both newspapers at Boise, Idaho.

I was born in Colorado and have lived with reclamation, irrigation, and hydroelectric power development all of my life, not only in my native State, in the Arkansas Valley and the South Platte Valley, but also in the North Platte Valley of Nebraska and the Wind River Valley in Wyoming. I came to Idaho 16 years ago because of the vast natural resources that awaited development.

Politically I am independent, although the only times I have been active in politics, or a candidate for office, I worked with the Republican Party.

Frankly, I was once strongly opposed to the building of a high dam at Hells Canyon. It seemed to me, at one time, that the Idaho Power Co. plan of small power dams was the best one offered. Friends of mine asked me to investigate further, look at the overall picture of the Northwest, study the merits of comprehensive development as opposed to single-purpose dams.

And I did take a second look at Hells Canyon and its potential.

The construction of a high Hells Canyon Dam is, in my studied opinion, most necessary if Idaho and the rest of the Northwest is to realize full conservation and development of the resources of the region.

It was an Idaho Governor, C. A. Robins, who first pointed out as a State official that a high Hells Canyon Dam was an integral part of the development of our State. That was in 1949.

Governor Robins outlined 10 points he considered important. Briefly they were:

1. Orderly development of reclamation through integration of power and irrigation features.
2. Preservation of upstream waters for the beneficial consumptive use of the people.
3. Allocation of power revenues to assist in repaying costs of reclamation beyond the ability of water users to pay.
4. Avoidance of expenditures for construction of transmission lines and distribution facilites for power where this amounts to duplication.
5. Development of barge navigation as a material aid to development of the resources of the interior.
6. Adoption of a small irrigation projects program.
7. Reimbursement of taxing units as both just and necessary.
8. Cooperation with the States and respect for their rights.
9. Coordination of plans and general agreement between the Corps of Engineers and the Bureau of Reclamation.
10. Construction of Scriver Creek and Garden Valley units of the Mountain Home project, early completion of the Palisades project, and the Hells Canyon project.

That was Governor Robins' statement on April 26, 1949.

We have come a long way since then.

The Palisades Dam is nearing completion. The North Side pumping project is steadily expanding. Michaud Flats has been authorized. Other upstream projects are being proposed and may soon come into being. All of these are far upstream from Hells Canyon and will not affect the return flow more than 5 percent, we are told by the best authorities.

But these upstream developments are important to a Hells Canyon Dam and to area development. Seepage back into the Snake River from irrigation acts as a regulatory measure for a Hells Canyon Dam. It eases the flood stage. It makes the flow more constant.

Since Governor Robins, a Republican, made his 1949 statement, the Anderson Ranch Dam has been completed on the Boise River. Lucky Peak Dam, for flood control, has also been constructed on the Boise River. Thus we have come a long way along the path proposed by one of Idaho's greatest governors. Certainly he was farseeing when he envisioned comprehensive development of our rivers.

The next step, or certainly one of the most important steps, is the construction of Hells Canyon Dam as a part of the full development of the region.

We are at the crossroads in Idaho. Either we continue this forward movement, or we fall far back to the rear ranks of States.

The only alternative offered for Hells Canyon Dam is a three-dam proposal by Idaho Power Co. The company would take over Hells Canyon for pitifully small power dams—single-purpose dams that do not fit into the development of Idaho or any other part of the Northwest. To let this giant corporation take over Hells Canyon for a power dam or two, would be like cutting down a California redwood tree to get a single fence post.

Only the Congress can prevent this waste of natural resources. Only the Congress of the United States can save Hells Canyon for the people. Unless Congress acts, it appears that Idaho Power Co. will install a small "spite dam," as my good friend, the late Senator George W. Norris, used to say. A "spite dam" at Oxbow, as proposed by Idaho Power Co., would set Idaho back 50 years, insofar as development is concerned.

And let me say, ladies and gentlemen of this committee, that the people of Idaho are not "scared" of a Hells Canyon Dam. The sound, substantial farmers have no fear of losing their water rights. I have talked to hundred and hundreds of them. They are my friends. They are subscribers to the Idaho Farm Journal, my publication. They are members of the Idaho Farm Bureau Federation, they are members of the Idaho State Grange, they are members of the Idaho Farmers Union. Many do not belong to any farm organization. They are dairymen, beef cattle breeders, rangemen and feeders, sugar beet growers, potato growers, woolgrowers. Many of them laugh at the antics of some so-called farm leaders who pretend to speak for thousands upon thousands of these independent-minded farmers.

And that is why these farmers, as well as merchants, professional men and others, have asked me to lend my voice in their behalf.

They want Congress to act. They want this bill passed. If it needs amendment, let it be amended. If it needs strengthening, let it be worded in the strongest, plainest, and most understandable language that can be found. But they want this bill passed.

STATEMENT OF GUS NORWOOD, EXECUTIVE SECRETARY, NORTHWEST PUBLIC POWER ASSOCIATION, VANCOUVER, WASH., RELATING TO HELLS CANYON DAM—(A) ADDED DOWNSTREAM BENEFITS, (B) ALTERNATIVE FINANCING FOR HELLS CANYON DAM

The Northwest Public Power Association, whose member utilities serve about 1,750,000 people with electricity, has consistently advocated construction of the high Hells Canyon Dam since March 1948. Testimony by the association has been presented at all hearings and has been voluminous. The present statement will not duplicate previous testimony but is confined to new information.

ADDED DOWNSTREAM BENEFITS

A serious deficiency in the FPC hearing has been the failure to give Hells Canyon Dam credit for the downstream benefits at:

	Kilowatts
Nez Perce Dam	287,000
Clarkston Dam	23,000
Asotin Dam	81,000
Total	391,000

These benefits were omitted on the assumption that these projects might not be built or might be built after the midpoint in the 50-year pay-out period of Hells Canyon Dam.

I expect these dams to be operating well before 1980. I also look for additional generators to be installed at Bonneville and other downstream dams which will benefit from Hells Canyon Dam river regulation. In my view the attitude of the FPC staff has been cavalier in writing off these benefits. FPC also errs in taking a short-range view of only 50 years.

The additional 391,000 kilowatts to present prime power of 1,122,000 kilowatts will increase Hells Canyon Dam prime power contribution to the region at 1,513,000 kilowatts and will bring the cost of power considerably downward.

It is my understanding that Federal and other witnesses elected to omit these additional benefits on the ground of conjecture and because they already had a solid, adequate, and unchallengeable case by counting only the potential downstream benefits at completed dams (Bonneville), projects under construction (McNary and The Dalles) and projects authorized (John Day and four lower Snake River dams). With this view I disagree. The Congress should be fully aware of the maximum potentiality of the Hells Canyon Dam. That potential is not less than 1,513,000 kilowatts.

ALTERNATIVE FINANCING

Some people apparently are not opposed to the Hells Canyon Dam but are opposed to Federal financing of its cost. The people of the Pacific Northwest are increasingly aware of this problem and are working on proposals for alternative financing.

The purpose of my testimony here is to suggest that Congress preserve first the tremendous potential of the Hells Canyon Dam site by approving the project. Meanwhile we will make every possible effort to work out a plan of alternative financing.

Please not that the Hoover Commission recommended one and suggested another alternative method for financing these Federal dams which avoid the appropriations and budget process and which at any rate would not increase the national debt.

WATER RESOURCES AND POWER RECOMMENDATIONS 12 AND 13

The Hoover Commission's June 1955 report on Water Resources and Power, volume 1, page 121, recommends seven Federal electric corporations which would permit building Hells Canyon Dam by means of electric revenue bonds. The text of these proposals is as follows:

Recommendation No. 12

That the Columbia River Basin system, the Hoover-Parker-Davis Dams Administration, the Central Valley project of California, the Missouri River Basin project, the Southwestern Power Administration, and the Southeastern Power Administration all be incorporated under and made subject to the Government Corporation Control Act.

Recommendation No. 13

That they and the Tennessee Valley Authority be required to secure their capital for their future improvements, when authorized by the Congress, by issuing their own securities to the public without subordinating the present Federal investment, thus relieving the taxpayers of this burden. (In such instance, our recommendation No. 1h should be amended so as not to apply to the interest and amortization on such public issues and to allow them to pay these items from their own funds.)

THE ALTERNATIVES

On pages 123 and 124 the Commission lists an alternative along the lines of the Port of New York Authority as a means of financing. The full text of this proposal follows and shows another way in which the Federal high Hells Canyon Dam may be financed:

"There is a desirable alternative to some of the recommendations outlined in the previous chapters. However, we make no formal recommendation on the subject. The Federal power activities being immune from State regulation as to rates and service and immune from State and local taxes, they have been able to expand bureaucratic empires within the States. With the completion of the present power projects, their number will probably reach about 30,000. The States are becoming more and more dependent on the Federal Government.

"What is fundamentally needed is for the States concerned in each of these Federal power regions to reassert their own vigor and independence.

"The Port of New York Authority offers a legal, financial, and administrative pattern for such action.

"Based on this pattern now tested by long experience, the States in these seven major Federal power regions could—

"1. Set up a compact among themselves as provided in the Constitution;

"2. Take over the Federal Government's power business in their region, agreeing—

"(*a*) To pay interest on the Federal Government's investment in the power segment of these multiple-purpose dams and other projects.

"(*b*) To pay back to the Federal Government the capital invested for hydroelectric installation over a period of 50 years and for steam installations over a period of 35 years.

"(*c*) To pay to the Federal Government whatever sum in lieu of taxes that might be agreed upon.

"(*d*) To subscribe that part of the costs allocated to power in any future Federal multiple-purpose projects in their regions and thus obtain that power without paying interest or amortization to the Federal Government.

"(*e*) To raise the capital for all these future needs by issuing to the public their own securities in the same way as the Port of New York Authority has found to be satisfactory and economical.

"(*f*) To fix their own rates for power as the New York Port Authority fixes the tolls through its tunnels.

"Such action would benefit the whole Nation by restoring State and local government. It would relieve the intolerable burdens on the Federal budget. It would check the rise of centralized government and bureaucratic control."

COLUMBIA RIVER DEVELOPMENT CORPORATION

On April 1, 1954, the Northwest Public Power Association adopted a resolution calling for the drafting of new legislation to create the Columbia River Development Corporation, to acquire the Bonneville Power Administration, and to finance additional power facilities by the issuance of electric revenue bonds.

An outline of this proposal was filed with the Hoover Commission 3 months later, on June 29, 1954.

Three drafts of the Columbia River Development Corporation bill were prepared and published August 1954, October 1954, and March 1955. The last draft is attached hereto as an appendix, together with an explanatory news release and some notes.

A fourth draft will be ready in January 1956 and will reflect the reaction of Congress to the TVA revenue-bond plan which is now scheduled for hearings.

Without discussing these financing plans in detail, I respectfully submit to the committee that the Hells Canyon Dam bill is not an appropriation. It is entirely possible that an alternative financing plan will be in effect by the time construction starts on this project.

Excluding the finance question enables the Congress to vote on the pure question of maximum versus a wasteful partial development of the magnificent Hells Canyon hydroelectric and reservoir project.

Our studies show that the Hells Canyon Dam will produce at least 60 percent more power for at least 50 percent less cost per kilowatt-hour than the alternative private scheme.

The people of the Pacific Northwest are overwhelmingly in favor of the high Hells Canyon Dam. I should like to say again no one is in favor of the high Hells Canyon Dam except the people.

[The Pacific Northwest Public Power Bulletin, Vancouver, Wash., March 1955]

HOME RULE FEATURES STRENGTHEN REGIONAL POWER CORPORATION BILL

To: All Northwest newspapers and radio stations.
From: Northwest Public Power Association.
Release: Thursday, February 24, a. m.

VANCOUVER, WASH. (Special).—The third draft of legislation for a four-State public electric corporation to carry forward the Northwest power program was released today by the Northwest Public Power Association in Vancouver.

Major changes from the second draft of last October permit the four States ultimately to take over and operate the proposed regional corporation according to Gus Norwood, executive secretary of the public power group.

The proposed bill provides for creation of a Columbia River Development Corporation, whose 5-man board would initially be appointed by the President with the advice and consent of the Senate.

Modeled after the St. Lawrence Seaway Development Corporation Act which was signed by President Eisenhower May 13, 1954, the Corporation would be empowered to issue 50-year electric revenue bonds to build generation and transmission. The Corps of Engineers and Bureau of Reclamation would continue to construct the dams financed by the Corporation. The Corporation would take the place of the Bonneville Power Administration.

The bill does not concern itself with whether power is sold locally by public or private utilities. It likewise avoids the controversial approach of both the

present interstate compact and the past proposals for a Columbia Valley Authority.

"The preparation of this bill," Norwood said, "presented two major problems: How to achieve an administrative organization which would (1) command the lowest possible rate of interest for its electric revenue bonds, and (2) meet the desire of the people of the Pacific Northwest for home rule.

"Our studies showed electric load requirements by the year 2000 might call for $20 billion for generation and transmission facilities in the Pacific Northwest. The chief cost factor, amounting to about 40 percent of all costs of wholesale power, would be the interest on the bonds. An extra 1 percent interest would increase the cost of electricity 16 percent.

"To achieve the lowest interest rate the bill provides for the Corporation to acquire the Bonneville Power Administration at the net cost to the Federal Government. This cost would be repaid under a second lien mortgage over a 50-year period. The bonds of the Corporation would be purchased by the Secretary of the Treasury during the first 5 years and until the bonds are 'seasoned.' Although the Corporation is to operate on a self-liquidating basis, the principal and interest on the bonds is to be guaranteed by the Federal Government, thus further to insure the lowest possible rate of interest. All these provisions of the October draft are unchanged in the new draft.

"On home rule, however, the association's special membership meeting at Spokane last December left instructions to incorporate four changes:

"(1) Make the Corporation boundaries coincide with those of the four States of Montana, Idaho, Oregon, and Washington. This not only reunites eastern and western Montana but also lays the foundation for ultimately converting the agency into a four-State corporation.

"(2) Insure that one director would be elected by each of the four States. No method for such immediate direct election of directors could be worked out short of an interstate compact for acquisition of the Corporation by the States. This alternative home-rule provision appears as the new section 17 wherein Congress grants consent to the four States to negotiate a compact. Under a compact a fifth director could be provided to reflect the continuing interest of the Federal Government.

"(3) Insure the Corporation would not serve new industrial loads within the service area of a local utility without prior consultation.

"(4) Preserve the right of local utilities to install their own hydroelectric and other power projects.

"Other provisions to increase responsiveness to the grassroots are the annual public hearings, the 15-man advisory council, the relatively autonomous status of Federal corporations, and the important authority to issue its own bonds.

"Over 300 changes have been made since the first draft of last August. Further changes for a fourth draft can be approved at our annual membership meeting April 21. Meanwhile copies of the bill have been sent to all Northwest Members of Congress."

Eighteen years have elapsed since the regional public electric corporation idea was first proposed in a 192-page report largely prepared by Prof. Charles McKinley of Reed College for the Pacific Northwest regional planning commission under the chairmanship of Marshall Dana. It was with this 1936 report in mind that Congress wrote into the Bonneville Act of 1937, "The form of administration herein established for the Bonneville project is intended to be provisional pending the establishment of a permanent administration for Bonneville and other projects in the Columbia River Basin."

COLUMBIA RIVER DEVELOPMENT CORPORATION

A BILL Providing for creation of the Columbia River Development Corporation to construct, operate and maintain electric power and related facilities in the interest of the national welfare and security; *to advance the cooperative development with Canada of international water resources;* providing a permanent administration for the Bonneville and other projects in the Columbia River Basin as contemplated by the provisional legislation of the Bonneville Project Act; empowering the Corporation to finance power facilities on a self-liquidating basis; and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

CREATION OF CORPORATION

SECTION 1. There is hereby created, subject to the direction and supervision of the President, or the head of such agency as he may designate, a body corporate to be known as the Columbia River Development Corporation (hereinafter referred to as the "Corporation").

FUNCTIONS OF CORPORATION

SEC. 2. (a) Subject to the provisions of this Act, the Corporation is authorized to acquire, construct, operate, maintain and improve in the Pacific Northwest such hydroelectric projects or other power producing facilities as may now or hereafter be authorized by the Congress. The term "Pacific Northwest," as used *in this Act, shall mean the area comprising the States of Washington, Oregon, Montana, and Idaho.*

(b) The electric energy generated in the operation of hydroelectric projects and other power facilities in the Pacific Northwest shall be disposed of by the Corporation as hereinafter provided. In order to encourage the widest possible use of all electric energy that can be generated and marketed and to provide reasonable outlets therefor and to prevent the monopolization thereof by limited groups the Corporation is authorized and directed to acquire, construct, operate, maintain, and improve such electric transmission lines and substations and facilities and structures appurtenant thereto as it find necessary, desirable, or appropriate for the purpose of transmitting electric energy, available for sale to existing and potential markets, and, for the purpose of interchange of electric energy, to interconnect the Corporation's transmission system with other power systems now or hereafter constructed.

(c) In order to carry out the purposes of this Act and to promote the unified and orderly development of the Columbia River Basin through the timely construction of multiple-purpose projects for the improvement of navigation, control of *floods, irrigation and reclamation, power* and other purposes, the financial feasibility of which depends upon the sale of electric energy, the Corporation shall be responsible for preparing and presenting to the Congress advance programs for construction of such projects and other facilities as will meet the anticipated net power requirements of the Pacific Northwest.

(d) *The Corporation shall, upon authorization by the President, make necessary arrangements to assure coordination of its activities with those of the Government of Canada, British Columbia or any agency of either, with respect to the utilization of water resources within Canada or the United States which affect waters in the other country.*

MANAGEMENT OF CORPORATION

SEC. 3. (a) The management of the Corporation shall be vested in a Board of five full time Directors who shall be appointed by the President, by and with the advice and consent of the Senate, and who shall receive compensation at *the rate of $15,000.00 per annum. The chairman of the Board shall be designated by the President.*

(b) The Board shall be responsible for policy, directive, and general supervisory functions. To assist the Board in the execution of the functions vested in the Corporation, the Board shall appoint a General Manager as chief executive officer who shall be responsible to the Board and shall perform such duties as the Board may from time to time designate.

(c) The terms of office of the Directors first taking office after the enactment of this Act shall expire as designated by the President at the time of nomination, one at the end of each of the five successive years after the date of enactment of this Act. A successor to a Director shall be appointed in the same manner as the original Directors and shall have a term expiring five years after the expiration date of the term for which his predecessor was appointed, except that a Director appointed to fill a vacancy in the Board occurring prior to expiration of the term for which his predecessor was appointed, shall be appointed for the remainder of such term. Upon the expiration of his term a Director shall continue in office until his successor is appointed and is qualified. *No Director shall be eligible for reappointment after having served two full terms.*

(d) Vacancies in the Board so long as there be three Directors in office shall not impair the powers of the Board to act. Three Directors shall constitute a quorum to transact the business of the Board. *The vote of a majority of Directors present shall be sufficient to decide any issue before the Board.*

(e) *Directors shall be citizens of the United States who shall have been residents of the Pacific Northwest for a period of five years preceeding their appointment and persons who profess a belief in the feasibility and wisdom of this Act. The Board shall at all times include a Director appointed from the residents of each of the States in the Pacific Northwest. No Director shall, during his continuance in office, be actively engaged in any other business or*

have a financial interest in any public utility engaged in the business of generating, transmitting, distributing, or selling power to the public, or in any holding company or subsidiary company of a holding company as those terms are defined in the Public Utility Holding Company Act of 1935.

(f) It shall be the duty of the Board to obtain counsel, assistance, and participation of the interested people of the Pacific Northwest, particularly through representatives of State and local governments and other organizations, public and private. To this end the Board is directed to hold annual public meetings in each of the principal cities of the Pacific Northwest at which the views of those interested can be presented and information concerning the Corporation's policies and programs be made available to the public. The Board is authorized to make additional arrangements for such consultation and interchange of views with respect to the formulation and execution of Corporation programs as it may deem advisable.

ADVISORY COUNCIL

Sec. 4. (a) To make continuously available independent assistance and counsel reflecting the needs and opinions of the people of the Pacific Northwest, there is hereby established the Advisory Council of the Columbia River Development Corporation which shall be composed of fifteen members, who shall be residents of the Pacific Northwest, who shall be appointed by the Board. In making such appointments, the Board shall endeavor to obtain representation of all groups of persons within the Pacific Northwest directly affected by the activities of the Corporation. *The terms of office of the Council members first taking office after the enactment of this Act shall expire as designated by the Board at the time of nomination, three at the end of each of the five successive years after the date of enactment of this Act. A successor to a Council member shall be appointed in the same manner and shall have a term expiring five years after the expiration date of the term for which his predecessor was appointed, except that a Council member appointed to fill a vacancy occurring prior to expiration of the term for which his precedessor was appointed, shall be appointed for the remainder of such term.*

(b) The Advisory Council shall annually elect a chairman and shall meet at the call of the chairman of the Advisory Council or the call of the Board, but not less often than once each calendar quarter. The Council shall review the general policies of the Corporation, including its advance program, policies in connection with design and construction of facilities, power marketing policies and the establishment of rates and charges and other matters, and shall advise the Board with respect thereto. The meetings of the Advisory Council shall be open to the public.

(c) Subject to national security requirements, the Advisory Council shall have access to any and all records of the Corporation and shall have authority to obtain such information as it may desire with respect to the operations of the Corporation, whose officers shall be required to supply any such information which may be reasonably obtainable under such regulations as the Board may from time to time approve. The Board shall furnish such facilities and personnel as may be reasonably required by the Advisory Council to carry out its functions under this Act.

(d) Members of the Advisory Council may attend any annual public meeting held under subsection (f) of section 3 hereof and shall be compensated therefor as hereinafter provided.

(e) The Advisory Council may make such studies related to the program, policies and activities of the Corporation as it deems necessary and shall publish or otherwise publicize its findings and recommendations.

(f) All expenses of the Advisory Council shall be paid from the funds of the Corporation as a current expense. The members of the Advisory Council who are not State or Federal officials shall receive such reasonable compensation as the Corporation may determine when actually engaged in the performance of their duties, and all members shall receive necessary traveling expenses while going to and coming from any meetings.

CORPORATE POWERS—GENERAL PROVISIONS

SEC. 5. Except as otherwise specifically provided in this Act the Corporation—

(1) shall have succession in its corporate name;

(2) may adopt and use a corporate seal, which shall be judicially noticed;

(3) may sue and be used in its corporate name;

(4) may adopt, amend, and repeal bylaws, rules, and regulations governing the manner in which its business may be conducted and the powers vested in it may be exercised;

(5) may carry out activities necessary or appropriate for the generation, transmission and disposition of electric energy;

(6) may acquire, by purchase, lease, condemnation, exchange, transfer, donation, or otherwise, such real and personal property, including any interest therein, as the Corporation deems necessary or appropriate in the carrying out of its powers,, and may sell, lease, exchange, donate, or otherwise dispose thereof: Provided, however, That unless authorized *by the law of the State in which* such facilities are located, the Corporation shall have no power to condemn power producing, transmission or distribution facilities for use as such by the Corporation;

(7) may enter into contracts, agreements, and arrangements, including the amendment, modification, adjustment or cancellation thereof;

(8) may settle and adjust claims held by it against other parties or persons or by other parties or persons against it, for which purpose the Corporation shall have with respect to claims within the scope of Title 28, U. S. Code, Chapter 171 (Tort Claims Procedure) the functions assigned to the Attorney General by that chapter;

(9) may make and carry out arrangements for the protection, alteration, reconstruction, relocation, replacement, or removal of railroad tracks and facilities, highways, bridges, mills, ferries, electric light plants, and any other properties, enterprises, and projects, which have been or are to be destroyed, flooded, otherwise damaged, or endangered, as the result of any projects or activities of the Corporation;

(10) shall determine the character of and the necessity for its obligations and expenditures, and the manner in which they shall be incurred, allowed and paid, subject to provisions of law specifically applicable to Government corporations;

(11) shall be held to be an inhabitant and resident, within the meaning of the laws of the United States relating to the venue of civil suits, of any judicial district *in whole or in part within the region, in which the Corporation carries* on activities at the time of the commencement of suit: *Provided*, That the Corporation may be sued in the district court of the United States for any such district without regard to the amount in controversy. Any proceeding brought against the Corporation in a court of any State may be removed by the Corporation to the district court of the United States for the district in which such proceeding is pending, and, to effect such removal, it shall not be necessary that any other party or parties defendant join in the petition for removal; and

(12) shall bring all condemnation proceedings in the name of the Corporation. In such proceedings, and with respect to any property which the Corporation is authorized to condemn pursuant to this section, the Corporation shall have the rights conferred upon the United States by the Act of August 1, 1888 (25 Stat. 357), as amended, and by the Act of February 26, 1931 (46 Stat. 1421), the provisions of both of which are hereby declared to be applicable to proceedings brought by the Corporation to the same extent as though it were expressly mentioned therein, except insofar as they are inconsistent with this section.

TRANSFER OF COLUMBIA RIVER POWER SYSTEM

SEC. 6. (a) The term "Columbia River Power System" means the facilities and properties of the Bonneville Power Administration and all Federal hydroelectric projects now or hereafter constructed in the Pacific Northwest (excluding, however, such specific nonpower facilities as do not constitute an integral part of any power dam or are not necessary for the operation of the project for the generation of power) and all Federal property or facilities within the Pacific Northwest held primarily for the specific use or benefit of the Bonneville Power Administration or in connection with the operation, maintenance, or administration of the hydroelectric projects hereinabove described.

(b) At such time or times as the President may determine, the Secretary of the Interior, the Secretary of the Army, and the General Services Administrator are each authorized and directed in the name of the United States to transfer, assign, and convey to the Corporation all of the right, title, and interest of the United States in all property and any interest therein of every kind and

nature, contracts, accounts receivable, and miscellaneous and other assets under their respective jurisdictions or control constituting a part of or held for the use and benefit of the Columbia River Power System, and to execute and deliver appropriate instruments for effecting such transfer, assignment, and conveyance: *Provided, however,* That all such right, title, and interest of the United States in the facilities and properties, contracts, accounts receivable and miscellaneous, and other assets of the Bonneville Power Administration and all Federal properties or facilities held primarily for its specific use or benefit shall be transferred, assigned, and conveyed to the Corporation within six months after the assumption of office of the Board.

(c) In connection with any transfer under subsection (b) the unexpended balances of funds appropriated or otherwise made available for the construction, *operation, or maintenance of the* Columbia River Power System and any balance in the special fund receipt account into which revenues from the sale of electric energy by the Bonneville Power Administrator are payable pursuant to Executive Order No. 8256, dated August 26, 1940, shall be transferred to the Corporation. All funds transferred hereunder shall be available for expenditure and shall be expended in the same manner and to the same extent as all other funds of the Corporation: *Provided, however,* That such funds shall be expended by the Corporation subject to such limitations as may be prescribed by any applicable appropriation Act during such period as may elapse between their transfer and the approval by the Congress of the first subsequent budget program of the Corporation under the Government Corporation Control Act.

(d) The Corporation shall assume all of the obligations and liabilities of the United States pertaining to any properties and contracts transferred, conveyed, or assigned to the Corporation.

(e) Upon a transfer, conveyance or assignment pursuant to subsection (b), the Corporation shall become liable to the United States for the cost of such properties and facilities (including all sums appropriated for operation and maintenance) which is allocated to power, less such sums as have been repaid by the agency or agencies having jurisidiction over the property and the marketing of any power generated thereat to be repaid as herein provided. In the event of a disagreement over the costs of such properties and facilities or of the amount repaid, the matter shall be referred to the Comptroller General of the United States, whose decision shall be final.

(f) Such employees of the United States having duties relating primarily to properties to be transferred under subsection (b) hereof as may be designated by the Secretary of the Interior, the Secretary of the Army or the General Services Administrator shall, at the time of transfer, become employees of the Corporation.

CONSTRUCTION AND OPERATION OF ELECTRIC POWER PROJECTS

SEC. 7. (a) The Corporation shall prepare an advance program after considering pertinent existing surveys and plans, conducting such additional surveys and investigations as may be necessary and obtaining the advice and assistance of appropriate Federal, State, and local agencies. Such advance program shall among other things, set forth the nature, extent, general location, sequence, and timing of major projects recommended; the method by which such major projects are proposed to be undertaken including the arrangements recommended for joint and cooperative action by the Corporation, other Federal agencies and State, local, and other agencies; with respect to each such project, evidence that such project is economically sound and in the public interest including, where appropriate, estimates of costs and benefits, of allocation of costs to the various purposes to be served and amounts to be repaid by the beneficiaries. *The first advance program shall be submitted to the President and Congress within two years and shall thereafter be revised annually and submitted with the budget program of the Corporation.* Prior to the presentation of the advance program to the President and Congress it shall be submitted to the Governors of the States of Montana, Idaho, Oregon, and Washington, the Secretary of the Interior, and the Secretary of the Army and shall be accompanied by their comments.

(b) The economical, unified development and regulation of the Columbia River system requires that no dam or appurtenant work, affecting in any manner the present or future construction, operation, or maintenance of water-control structures on the Columbia River or its tributaries, be constructed until plans for such construction, operation, and maintenance shall have been submitted to and approved by the Board; and the construction, commencement of construction,

operation, or maintenance of such structures without such approval is hereby prohibited. *Not more than six months after the submission of such plans the Corporation shall submit to the applicant proposed findings upon the relation of such work to the Columbia River system and the economical unified development and regulation thereof and upon the request of the applicant shall hold a public hearing upon the application.* When such plans shall have been approved, deviation therefrom either before or after completion of such structures is prohibited unless the modification of such plans has previously been submitted to and approved by the Board.

The requirements of this subsection shall not be construed to be a substitute for the requirements of any other law of the United States or of any State, now in effect or hereafter enacted, but shall be in addition thereto, so that any approval, license, permit, or other sanction now or hereafter required by the provisions of any such law for the construction, operation, or maintenance of any structures whatever, except such as may be constructed, operated, or maintained by the Corporation, shall be required, notwithstanding the provisions of this subsection.

(c) The construction of hydroelectric projects and other power facilities shall be limited to the Pacific Northwest and to specific power facilities, facilities jointly used for power and one or more other purposes, and such specific nonpower facilities, the construction of which is necessary for or incidental to the construction of the projects for the generation of power, which shall have been included in the annual budget program submitted to the Congress in accordance with the Government Corporation Control Act.

(d) The head of any Federal agency constructing a hydroelectric project in the Pacific Northwest under other law shall install such machinery, equipment, and facilities for the generation of electric energy as in the judgment of the Corporation is desirable.

(e) The Corporation shall operate and maintain hydroelectric projects and other power facilities constructed or acquired by it pursuant to this Act. The Corporation shall operate and maintain at its own expense the portion of such hydroelectric projects and facilities which are allocated to purposes other than power but this obligation shall not be construed to prevent making of the credit with respect to the costs of such operation and maintenance which is provided by subsection (d) of section 10 of this Act.

(f) Any Federal agency having data or information pertinent to the functions of the Corporation is authorized and directed to make such information available to the Corporation. The Corporation is authorized to cooperate with, carry out its functions through, and utilize the work and services of any Federal or State agency upon such terms and conditions as may be agreed upon by the Corporation and such agency, and the advance of funds made available in accordance with the terms and conditions of this Act is hereby authorized. Any agreement for the construction, operation, or maintenance of any hydroelectric project by a non-Federal agency shall be as favorable to the United States as if the project were constructed, operated, or maintained by the Corporation.

(g) The authority granted by this section is in addition to the authority granted by any other Act. The Corporation shall operate water control projects in accordance with regulations of the Secretary of the Army authorized by law relating to flood control.

Whenever the President finds that the transfer to the Corporation of any function or part thereof of any Federal agency relating to the construction, operation, or maintenance of water control facilities will promote more effective management, reduce expenditures, or promote economy and increase the efficiency of such operations of the Government, he is hereby authorized to effect such transfer by submission to Congress in accordance with the procedure of any Reorganization Act then in effect.

PURCHASE AND DISPOSITION OF ELECTRIC ENERGY

SEC. 8. (a) Any other Federal agency operating power producing facilities in *the Pacific Northwest upon request of the Corporation shall deliver the electric energy*, not required for the operation of such project, to the Corporation for disposition in accordance with the terms of this Act.

(b) The Corporation may enter into contracts or arrangements for the purchase or exchange of electric energy, for the use of transmission facilities and for the purchase, exchange, sale, storage, or release of water, including the exchange of electric energy or the use of transmission facilities therefor, incident to the generation, transmission, and disposition of electric energy. The

limitations in sections 2 and 7 of this Act on the area within which the Corporation may construct or acquire hydroelectric projects shall not be construed to extend to the purchase or exchange of electric energy or water.

(c) The Corporation in contracting for the disposition of electric energy shall give preference and priority to Federal agencies for their own consumption only, to States, their agencies, instrumentalities, or political subdivisions, or agencies of two or more States (in this Act called public agencies), and to cooperative and other organizations organized or administered not for profit but primarily for the purpose of supplying members with commodities or services as nearly as possible at cost (in this Act called cooperative agencies). *In administering the provisions* of this section, the Corporation shall accord the people and communities within economic transmission distance reasonable opportunity and time, as determined by the Corporation, to acquire, purchase, or construct the necessary facilities for the use or distribution of such electric energy, or to create or finance such public or cooperative agencies.

(d) The Corporation is authorized to enter into contracts for the sale or disposition of electric energy at wholesale, whether for resale or direct consumption. Each contract entered into under *this subsection (1) shall be for a term of* not to exceed 20 years from the date of the making of such contract, (2) shall (in the case of a contract with any purchaser, other than a public or cooperative agency, who resells the bulk of the electric energy purchased) contain appropirate provisions authorizing the Corporation to cancel the contract in whole or in part, upon not more than five years' notice in writing whenever, in its judgment, there is reasonable likelihood that part of the electric energy supplied under such contract will be needed to satisfy the requirements of public and cooperative agencies, and (3) may contain such other terms and conditions (including provisions to insure that resale to the ultimate consumers shall be at rates and on conditions which are reasonable and nondiscriminatory) as the Corporation may deem appropriate for carrying out the purposes of this Act. *Contracts for the sale of electric energy for direct consumption by purchasers not previously served by the Corporation shall be entered into only upon consultation with and approval by the local distribtuion agency or upon the basis of a finding by the Board that the service of the anticipated load by a distributor of electric energy is not appropriate.*

(e) Schedules of rates at which electric energy will be contracted for sale shall be established by the Corporation from time to time, at the lowest possible levels consistent with sound business principles, but not less than levels which in the aggregate will produce, from estimated sales of electric energy, revenues at least sufficient to cover (1) all costs of operation and maintenance, including the purchase of electric energy, (2) the principal and interest on all outstanding revenue bonds, and (3) the principal and interest due the United States pursuant to section 10 of this Act. Rate schedules may provide for uniform rates or rates uniform throughout prescribed transmission areas.

ALLOCATIONS AND ACCOUNTS

SEC. 9. (a) The Corporation shall determine (1) the costs of its facilities, including the land and interests in land on which such facilities are constructed, and (2) the costs of operating and maintaining such facilities, of purchasing electric energy, and of carrying on the other activities of the Corporation. The Corporation shall allocate such costs among the various purposes served by the facilities and activities: *Provided*, That costs of water control projects shall be allocated among the following purposes only, except where the Congress expressly authorizes allocations for such a project to specific additional purposes: (1) generation, transmission, and disposition of electric energy; (2) reclamation, (3) domestic, municipal or industrial water supply; (4) flood control, (5) navigation, (6) preservation and propagation of fish and wildlife, (7) recreation development, (8) pollution control or abatement, (9) watershed management, and (10) other purposes, if any, to which costs of Federal water control projects may be allocated under the provisions of Federal laws applicable to such Federal water control projects. Costs with respect to facilities and activities serving only one purpose shall be allocated to that purpose. Costs with respect to facilities and activities serving more than one purpose shall be equitably allocated among such purposes. Such allocations thus made by the Corporation shall be final upon approval by the President.

(b) In order to facilitate sound financial administrative, improve the marketability of its revenue bonds, and insure full disclosure as to probable cost allocations for its multiple-purpose water-control projects, the Corporation, as part

of its annual budget program, shall present a tentative cost-allocation report on each proposed new multiple-purpose project, facility, activity, or major modification thereof, including major modification in the purposes and methods of operation. The report shall be prepared in accordance with subsection (a) of this section. The tentative cost-allocation report as approved by Congress as part of the annual budget program of the Corporation shall be the basis for assigning and crediting costs during the construction period of the project subject to adjustment when the final cost-allocation report is approved. Consistent with the tentative cost-allocation report and upon the completion of the project, and from time to time in the case of continuing activities, the Corporation shall prepare a cost-allocation report on the actual costs which shall be final upon approval by the President.

(c) The Corporation shall at all times maintain complete and accurate books of account, including with respect to its purchase, generation, transmission, and disposition of electric energy, accounts kept in accordance with section 303 of the Federal Power Act, as amended.

FINANCE

SEC. 10. (a) Revenues of the Corporation during any fiscal year may be used solely for the following purposes, subject to limitations imposed pursuant to the Government Corporation Control Act, and subject to the following order of priority:

(1) To pay the direct cost of operating the Corporation's power system and maintaining its property (including but not limited to operating and maintenance costs allocated to purposes other than power but authorized by section 7 of this Act, and charges under agreements for the operation or rental of facilities or other properties, or for the purchase of energy or water), and to pay such administrative expenses as the Board may deem necessary to carry out the authorized activities of the Corporation.

(2) To pay the cost of any replacement of equipment or facilities when such payment is found by the Board to be essential to avoid a breakdown in the then-existing service or an impairment of the then-existing net revenues of the Corporation, except as may otherwise be provided by covenant in any bond issued under subsection (b) of this section.

(3) To pay interest on and principal of bonds issued under subsection (b) of this section.

(4) To provide reserves in such amount and manner as may be required by the terms of any bonds outstanding, and in such additional amount as the Board may deem necessary and appropriate to the purposes of this Act.

(5) To pay interest and principal to the United States in such amounts as may be necessary to comply with subsection (e) of section 6 of this Act.

(6) To pay the cost of such acquisition, construction, improvement, or replacement of facilities or other properties as may be authorized by this Act and directed by the Board.

(7) To effect the advance retirement of any revenue bonds of the Corporation which may be subject to call, or of any part of the obligation of the Corporation to the United States.

(b) In order to finance the authorized acquisition, construction, improvement, and replacement of facilities or other property, to provide necessary working capital, and to refund its outstanding bonds, the Corporation may from time to time issue negotiable interest-bearing revenue bonds and to pledge its net revenues, to the extent required, to the payment of the interest on and principal of such bonds. Each issue of such bonds shall nature in not to exceed 50 years, and provision shall be made, by serial maturities, sinking fund payments, or otherwise for the complete amortization and retirement of each issue of such bonds within a period of 50 years from date of issuance. Such bonds shall be fully and unconditionally guaranteed both as to interest and principal by the United States, and such guaranty shall be expressed on the face thereof, and such bonds shall be lawful investments, and may be accepted as security, for all fiduciary trust, and public funds, the investment or deposit of which shall be under the authority or control of the United States or any officer or officers thereof. In the event that the Corporation should not pay upon demand when due, the principal of, or interest on, such bonds, the Secretary of the Treasury shall *pay to the holder the amount thereof and thereupon to the extent of the amount* so paid the Secretary of the Treasury shall succeed to all the rights of the holders of such bonds. The Board may establish such reserves and make such convenants (including restrictions on payments under agreements and arrangements there-

after concluded in respect of the operation or leasing of facilities and purchases of energy or water), not inconsistent with the provisions of this Act, as it deems appropriate to enhance the marketability of such bonds; may determine at its discretion the form, denomination, interest rate, call features, and registration provisions of such bonds; may sell such bonds at public sale, at not less than 98 per centum of the face value thereof, and subject to its right to reject all bids at such sale; may employ financial, legal, engineering, or other technical advisers in connection with the issuance of such bonds without regard to the civil service laws or any other law of general applicability to government instrumentalities; may employ such trustees or paying agents as may be required; and may do any and all other things which it deems necessary to accomplish the purposes of this section and which are not inconsistent with the provisions of this Act: *Provided*, That the interest and principal amount of all such bonds shall rank equally as to priority of claim on revenue regardless of the date of issue: *Provided further*, That no such bonds shall be issued for the purpose of financing or refinancing any obligation owing from the Corporation to the United States assumed pursuant to subsection (e) of section 6 of this Act or otherwise, except obligations represenlted by bonds held by the Secretary of the Treasury under subsection (c) of this section: *Provided further*, That no such bonds shall be issued except upon terms and pursuant to arrangements approved by the Secretary of the Treasury.

(c) The Corporation and the Secretary of the Treasury are authorized and directed to collaborate in fostering and promoting the development of markets for the sale of the bonds herein authorized, and of private channels for the financing of the publicly owned development contemplated by this Act: *Provided*, That the Secretary of the Treasury is authorized to buy, sell, and exchange said bonds. In order to effecuate the purposes of this Act, the Secretary of the Treasury is authorized and directed to purchase any obligations of the Corporation issued hereunder during the first five years of the Corporation's existence, and thereafter such obligations as are not sold to the investing public, and for such purpose the Secretary of the Treasury is authorized to use as a public debt transaction the proceeds from the sale of any securities issued under the Second Liberty Bond Act, as amended. The purposes for which securities may be issued under the Second Liberty Bond Act, as amended, are extended to include any purchases of the Corporation's obligations hereunder.

(d) Costs (construction, operation, and maintenance, additions and replacements) allocated to purposes other than power paid by the Corporation shall be applied as a credit on payments due the United States under subsection (e) of this section.

(e) The liability of the Corporation incurred under section 6 hereof and amounts appropriated for costs allocated to power for facilities otherwise acquired by the Corporation or for the generation and delivery of power to the Corporation under subsection (a) of section 8 hereof, and interest thereon on the balances remaining from time to time unpaid shall be paid over a period of fifty years. Equal annual payments shall not be required, but at least 20 per centum of the principal shall be paid during each ten year period of the term: *Provided*, That payments pursuant to this subsection shall not be made until after the Corporation has met all requirements for operation and maintenance of its properties and for servicing its outstanding revenue bonds: *Provided further*, That amounts credited on such payments, pursuant to subsection (d) of this section shall constitute a payment within the requirements of this subsection. The rate of interest for each fiscal year shall be the average interest cost on outstanding marketable interest bearing obligations of the United States Treasury as computed by the Secretary of the Treasury as of June 30th of the preceding fiscal year. Payments or portions thereof attributable to facilities authorized under other laws shall be credited or applied in accordance with such other laws.

PAYMENTS IN LIEU OF TAXES

SEC. 11. The Corporation is authorized to make payments to State and local governments in lieu of property taxes upon property which was subject to State and local taxation before acquisition by the Corporation. Such payments may be in the amounts, at the times, and upon the terms the Corporation deems appropriate, but the Corporation shall be guided by the policy of making payments not in excess of the taxes which would have been payable for such property in the condition in which it was acquired, except in cases where special burdens are placed upon the State or local government by the activities of the Corporation or

its agents. The Corporation, its property, franchises, and income are hereby expressly exempted from taxation in any manner or form by any State, county, municipality, or any subdivision thereof, but such exemption shall not extend to contractors for the Corporation.

PERSONNEL PROVISIONS

SEC. 12. (a) The Corporation shall, subject to the civil service laws, including the Veterans Preference Act of 1944, as amended, and without regard to the Classification Act of 1949, as amended, *or any other law, rule, or regulation relating to government employment, employ and fix* the compensation of such officers, employees, attorneys, agents, and consultants as are necessary for the transaction of its business, define their duties, require bonds of such of them as the Board may designate, the premiums for which shall be paid by the Corporation, and provide a system of organization to fix responsibility and promote efficiency. Subject to the provisions of this Act, the Corporation is authorized to deal collectively with its employees through representatives of their own choosing and is authorized to enter into written or oral contracts with such employee representatives.

(b) In the employment, selection, classification, and promotion of officers and employees of the Corporation, no political test or qualification shall be permitted or given consideration, but all such employments and promotions shall be given and made on the basis of merit and efficiency. It shall be unlawful to make or assist in the making of or cause to be made any employment, selection, classification, or promotion of any officer or employee of the Corporation on the basis of or because of any political qualification or test, and if the General Manager violates this provision he shall be removed from office by the Board. Any officer or employee of the Corporation who is found to be guilty of a violation of this subsection shall be removed by the General Manager.

(c) The benefits of the Act of September 7, 1916 (39 Stat. 743), as amended, relating to compensation for employees of the United States suffering injuries, shall extend to persons given employment under the provisions of this Act and the right to benefits under such Act of September 7, 1916, as amended, shall be exclusive and in place of any and all other liability of the Corporation and the United States to pay damages or workmen's compensation to such persons, or to the dependents, next of kin, or legal representative of such persons, or to any person otherwise entitled to recover damages, on account of injury or death within the purview of such Act.

(d) The provisions of the Act of March 3, 1931 (46 Stat. 1494), as amended, shall apply to all contracts in excess of $2,000 to which the Corporation is a party and which require the employment of laborers or mechanics in the construction, alteration, maintenance, or repair of its buildings, dams, locks, or other structures or facilities, except that the powers of the Comptroller General of the United States thereunder with respect to payment of amounts withheld from contractors shall be exercised by the Corporation with respect to funds within its control. In the determination of such prevailing rate or rates, due regard shall be given to those rates which have been secured through collective agreement by representatives of employers and employees.

(e) The Corporation is authorized to request the assistance and advice of any officer, agent, or employee of any executive department, independent office, or agency of the United States to enable the Corporation the better to carry out its powers successfully. The executive departments and independent offices and agencies of the United States are authorized to make such officers, agents, and employees available to the Corporation with or without reimbursement upon terms mutually agreeable to such department, independent office, or agency and the Corporation.

(f) The Corporation shall contribute to the civil-service retirement and disability fund, on the basis of annual billings as determined by the Civil Service Commission, for the Government's share of the cost of the civil service retirement system applicable to the Corporation's employees and their beneficiaries. The Corporation shall also contribute to the employee's compensation fund, on the basis of annual billings as determined by the Secretary of Labor, for the benefit payments made from such fund on account of the Corporation's employees. The annual billings shall also include a statement of the fair portion of the cost of the administration of the respective funds, which shall be paid by the Corporation into the Treasury as miscellaneous receipts.

PROCUREMENT OF SUPPLIES AND SERVICES

SEC. 13. All purchases and contracts for supplies or services, except for personal services, made by the Corporation shall be made after advertising, in such manner and at such time sufficiently in advance of opening bids, as the Corporation shall determine to be adequate to insure notice and opportunity for competition: *Provided*, That advertisement shall not be required when (1) the Corporation determines that immediate delivery of the supplies or performance of the services is required by an emergency or to assure continuous operation, or (2) parts, accessories, supplemental equipment, minor extensions or additions, or services are required for supplies, facilities, or services previously furnished, constructed, or contracted for, or (3) the aggregate amount involved in any purchase of supplies or procurement of services does not exceed $10,000. In comparing bids and in making awards, the Corporation may consider all factors which it deems pertinent, including, but without limitation, relative quality and adaptability of supplies or services, the bidder's financial responsibility, plant, equipment and facilities, skill, experience, record of integrity in dealing, previous record of performance and compliance with specifications, and ability to furnish repairs and maintenance services, and the time of delivery or performance offered.

REPORTS TO CONGRESS

SEC. 14. The Corporation shall submit to the President for transmission to the Congress at the beginning of each regular session an annual report of its operations under this Act, which may include recommendations for such legislation as may be deemed desirable for carrying out the general purposes of this Act.

GOVERNMENT CORPORATION CONTROL ACT

SEC. 15. Section 101 of the Government Corporation Control Act is hereby amended by inserting after the words "Saint Lawrence Seaway Development Corporation" the words "Columbia River Development Corporation".

APPROPRIATIONS

SEC. 16. All appropriations necessary to carry out the purposes of this Act are hereby authorized.

CONSENT TO INTERSTATE COMPACT

Sec. 17. The consent of Congress is hereby given to the States of Idaho, Montana, Oregon, and Washington to negotiate and enter into a compact providing in whole or in part for the assumption of the duties and powers of the Corporation upon condition that one qualified person shall be appointed by the President of the United States who shall participate in said negotiations as the representative of the United States and shall make report to Congress of the proceedings and of any compact entered into: Provided, That any such compact shall not be binding or obligatory upon any of the parties thereto unless and until the same shall have been ratified by the legislatures of each of the four States and approved by the Congress of the United States.

REPEAL OF BONNEVILLE PROJECT ACT

SEC. 18. Effective as of the date of transfer, assignment, and conveyance required by section 6 of this Act, the Act of August 20, 1937, entitled "An Act to authorize the completion, maintenance and operation of Bonneville Project for navigation, and for other purposes" (50 Stat. 731), as amended, is hereby repealed.

SEPARABILITY OF PROVISIONS

SEC. 19. If any provision of this Act or the application of such provision to any person or circumstances shall be held invalid, the remainder of the Act and the application of such provision to persons or circumstances other than those to which it is held invalid shall not be affected thereby.

NOTES

Italic indicates change from second preliminary draft.

The third preliminary draft of the Columbia River Development Corporation bill is the result of an 11-month effort and some $3,000 of expense.

The project was instituted by the Northwest Public Power Association by a resolution adopted April 1, 1954.

Preliminary specifications were printed in the May NWPPA Bulletin. On May 13, 1954, President Eisenhower signed into law the St. Lawrence Seaway Development Corporation Act. This law was promptly adopted by Attorney Robert L. Avery, of Vancouver, as the pattern for preparing the first preliminary draft which was printed August 16, 1954, and circulated to a limited list of 700 names. Some 200 changes were suggested which resulted in resetting 55 percent of the type.

Meanwhile the June Bulletin reported support and suggestions of the Washington PUD Association. The September Bulletin contained a book review of the famous McKinley Report of 1936 which first recommended a regional power corporation for the Pacific Northwest.

The October Bulletin presented the second preliminary draft which resulted in extensive news coverage and much friendly comment. The December Bulletin reprinted two pages of news and editorial copy and contained a supporting article, More Juice—Less Squeeze.

The December 10 membership meeting approved 22 changes in the second draft and issued 4 instructions for further changes as reported in the January 1955 Bulletin. Thereupon the membership adopted the resolution which appears below.

RESOLUTION

In order to carry forward and accelerate the Northwest power program on a basis of assuring an adequate power supply, at the lowest possible rates consistent with sound business principles and consistent with comprehensive development of the water resources, the Northwest Public Power Association at its special membership meeting December 10, 1954, resolves that this association accept and endorse the third preliminary draft of the Columbia River Development Corporation bill.

Appreciation is expressed to the many individuals, newspaper editors, and civic organizations which gave so generously of their time and talents to prepare this draft and we most earnestly plead for further comments and any steps to expand further public interest in the preparation and sponsorship of this legislation. This bill definitely is open to further improvement upon approval by the board of trustees.

It is further resolved that this third preliminary draft be presented to the Pacific Northwest congressional delegation for study with a view to early introduction in Congress on a bipartisan basis by the entire delegation or so many members thereof as are able. It is hoped that the bill may be introduced by March 1955 and that at least a preliminary congressional hearing be held thereon as soon as convenient. It is contemplated that after introduction of the bill, the various Federal agencies would be requested to study the bill and suggest possible changes. Possibly public hearings might be held in the Pacific Northwest late in 1955 to the end that Congress may give consideration to a final draft of legislation in 1956.

STATEMENT OF ALFRED J. RIECHERS, TWIN FALLS, IDAHO, HELLS CANYON HIGH DAM AS SET OUT IN H. R. 4719 FILED BY CONGRESSWOMAN GRACIE PFOST

Please permit me, as a citizen of the United States and a resident of the State of Idaho, to give my views on construction of high Hells Canyon Dam as proposed by H. R. 4719, 84th Congress, 1st session, as presented by Congresswoman Gracie Pfost, of Idaho's Congressional District.

I am a farmer and a resident of the Salmon Falls Creek project, commonly known in southern Idaho as the Salmon tract, which is located in central Twin Falls County, Idaho. In voicing my support for the high Federal dam at Hells Canyon, I feel confident that I express the attitude and opinion of a majority of the working farmers in my section of the State.

At the present time the so-called Salmon tract comprises some 60,000 acres with an almost unlimited area to the west, east, and south of the project which could be profitably irrigated were irrigation water available. Most of the soil is of excellent quality and the climate is mild with no extremes of either hot or cold, which fact makes the tract an ideal area for almost all irrigated crops grown commonly in the Northwest. At the present time the annual water delivery is less than half that considered adequate for an irrigated project.

67129—56——12

It so happens that several months ago five of us were elected to a committee to determine the possibility of securing supplementary water for the tract. The committee found that, first of all, a somewhat detailed study and investigation of the potentialities of the main stem of the Snake River and its tributaries was necessary. This study has resulted in the acquisition of much enlightening information and factual knowledge not generally known to the general public. I should like to list a very few of these facts:

(1) The Snake River is a very long steep river. In its 1,073 miles from the place where it leaves Yellowstone Lake to where it empties into the Columbia River below Pasco, Wash., it drops more than 9,000 feet. This enormous drop gives the Snake an advantage in power potential not enjoyed by any other river.

(2) The 11 million kilowatt potential of the Snake is 12.84 percent or one-eighth that of the entire Nation. It is 36.15 percent of the Columbia Basin total.

(3) The power potential of the Snake has never been developed. To quote from the September 1953 Pacific Northwest Public Power Bulletin published at 1311 Columbia Street, Vancouver, Wash., "This [the Snake] is a phenomenal river, yet in 1948 the Army could list only 171,300 kilowatts of harnessed hydro for the entire basin, or 1½ percent of the potential. Even today the river is 97 percent undeveloped. It is practically a virgin river."

(4) Authentic sources of information concerning river development are not numerous. The best ones that are available are: The Comprehensive Development Plan (commonly known as the 308 report) published by the Corps of Army Engineers, and the Bureau of Reclamation's report titled "The Snake River, Oreg., Wash., and Idaho." There are but very few of these reports available in southern Idaho, possibly not more than a half dozen.

(5) Altogether too much of the water in the Snake River is wasted and flows on to the Pacific without any beneficial use having been made of it whatsoever. The spill over Milner Dam averages approximately 1,220,000 acre-feet each year. The flow of the river at Bliss is in excess of 5,500,000 acre-feet. Some power development is to be found in the 1,000-foot drop between Milner and Bliss but the potential has never been more than very partially developed. Due to the need for additional irrigation and power development in southern Idaho, no water should ever be allowed to spill over Milner Dam. With the gates at Milner closed, it may be seen from the above figures that there would still be approximately 4 million acre-feet available for irrigation and power development at the Bliss Dam site. Closing of the gates of Milner Dam is, of course, dependent upon proper upstream storage and management.

(6) The Hells Canyon Dam site is perhaps the best remaining one in the Nation. It would provide 900,000 kilowatts of badly needed new power and would also provide 3,880,000 acre-feet of storage capacity. The pay-out ratio of the high dam would be 1.81. In other words, at the end of 50 years, the dam would have returned to the American people $1.81 for every dollar invested in it. This does not include various taxes returned to the States and Nation, and other benefits, due to growth of agriculture and industry. Other benefits would also accrue such as flood control; our phosphate beds (60 percent of the world's supply of high-grade phosphate) would be developed.

The above are but a few of the more interesting facts that our committee has discovered while earnestly trying to find approximately a hundred thousand acre-feet of supplemental water. The committee believes that a high Federal dam would enable the Government to construct a high-voltage line from the dam down through southern Idaho to the phosphate beds. Feeder lines could then be constructed to pump areas and to those REA projects and others in need of supplementary power. Power revenue from the Federal dam could be used to help pay the costs of new irrigation projects and also to help pay the cost of supplying additional water to irrigated tracts in need of such water.

With the above development, plus adequate upstream storage, the gates at Milner Dam could be closed the entire year, and the small decrease in power output at such plants as Shoshone Falls and Twin Falls which would result from such closure could be made up from power from Hells Canyon. Thus, the private power companies would not lose, and irrigation in southern Idaho would benefit greatly.

As was mentioned above, the information available to the general public concerning river development is not extensive. This enables propagandists of the private power companies to disseminate oceans of false, misleading, and insidious propaganda. As a general rule, this is the public's only source of information.

Some of the false and misleading statements are interesting and are worth noting:

(1) "Low dams produce more electricity than high dams, hence the advisability of low dams such as the one at Bliss."

(2) "If high Hells Canyon Dam is constructed, your water rights will be destroyed." But according to this same argument, Grand Coulee, Bonneville, and American Falls would also ruin these rights. This false argument is perhaps used more than any of the others.

(3) "Engineers never agree on anything, hence their reports are not to be relied upon."

(4) "Steam is a better means of generating electricity than water, anyhow." The insinuation here is that steam plants should be constructed along the Snake and Columbia Rivers, prior to development of profitable hydro sites.

Again, there are but a very few of the propaganda "gems." They remind one of the ancient political cry which went up in Emperor Constentine's vast empire: "Constentine and the constitution." But most of the peasants knew so little about constitutions and other political matters that they actually believed the word "constitution" to mean Constentine's wife.

Propaganda agents are all of a general type. They are friendly, affable, likable and always well-dressed individuals who fan out into civic groups, granges, farm bureaus and other organizations. They suggest, after a short talk, that the organization go on record against the federally constructed Hells Canyon Dam. "Now let's make it unanimous" they cry and the membership usually does so, not knowing a thing whatsoever about the subject upon which they are legislating. Few, if any, of the members present know that such a report as the 308 report exists much less know what there is to be found in it. They base their vote and opinion solely upon a favorable impression of their friendly guest which was formed at that meeting. Power company employees are great joiners and are to be found in every organization.

I have devoted so much space to a discussion of propaganda and its dispensers to show conclusively that the bushels of resolutions from such organizations that will be handed to you at the hearings will have very little, if any, value. Since the membership of the organizations that send in the resolutions know little or nothing about the subject of river development, these papers are almost completely worthless. Neither are they any indication of the sentiment of a given ocmmunity.

At about the time the Idaho Power Co. appeared on the scene in southern Idaho in 1916, there were still talks of numerous new irrigation projects to be constructed in the near future. There was, first of all, the "Golden Valley" project. Water from the Snake River would be diverted in the vicinity of the Minidoka Dam and used to water approximately 200,000 acres of exceptionally good land south of the Burley project and to the West. Then, there was the Bruneau project and the vast Mountain Home project and others. Soon all talk of these projects was dropped, surveys were stopped, and all hope of additional reclamation in southern Idaho seemed to be ended. It would seem that the Idaho Power Co. must assume responsibility in this halt in development. As late as 1945, one could hear talk of a large dam at Bliss, together with the irrigation of hundreds of thousands of additional acres on the Bruneau and Mountain Home deserts, but all such talk was suddenly ended when Idaho Power constructed their low-head Bliss Dam.

We, of the Salmon Tract Supplemental Water Committee, must conclude from these facts and others secured from talks with former engineers and reclamation employees that Idaho Power Co. must bear the responsibility for this halt in reclamation in Idaho. This is a serious accusation, we know, but the facts and their sources are entirely reliable.

I should like to include in this report a quotation from the same Public Power Bulletin mentioned above:

"THE PROMISE OF THE SNAKE

"Locked in the canyons of the Snake River is one-eighth of the Nation's future hydro power and one-third of the hydro of the Northwest. The Snake is almost a virgin stream, 97 percent undeveloped. It offers 33 million acre-feet of urgently needed upstream storage. The Snake River is the finest power stream in America. Keep an eye on the Snake because this power belongs to the people, all of the people of the Nation."

Enclosed with this report are the following papers: 1. Letter from Lloyd Tupling, 2. Table showing spill over Milner Dam.

The first paper shows the spill past Milner Dam since 1927. This is a possible source of irrigation water.

The second is a private letter which I received from Mr. Lloyd Tupling. It gives conclusive evidence that Idaho Power Co. is not advancing the cause of reclamation in southern Idaho.

As you know, Examiner Costello ruled against the three-dam plan of the Idaho Power Co. Mr. Costello is an expert in such matters and his opinions are to be respected. Examiner Costello found that dollar for dollar the high dam plan was by far the best investment.

Two of Mr. Costello's statements are worth noting:

"* * * The cost of the Idaho Power Co. three-dam output will always exceed the upper limit of the sales price for wholesale power in the Northwest."

And "This will also be so in 1980 when all of the additions to capacity in the Northwest will be steam-electric."

You have undoubtedly received a summary report of Mr. Costello's findings. The examiner then goes on to recommend one dam at Brownlee only because he is of the opinion that the Congress will never vote the necessary funds for the high dam.

It would seem, then, that it is the duty of the committee to report out the bill favorably and to work for its immediate passage in the House of Representatives. The benefits to be derived from such legislation in both the Pacific Northwest and in the Nation as a whole are innumerable.

Your past cooperation is appreciated, and please rest assured that I shall be willing at all times to furnish the committee with additional information if such is needed.

Water spilled past Milner Dam including power company rights

Year	*Amount (acre-feet)*	*Year*	*Amount (acre-feet)*
1927	544, 565	1941	196, 367
1928	190, 904	1942	673, 110
1929	8, 788	1943	2, 832, 540
1930	13, 944	1944	1, 845, 970
1931	672, 000	1945	1, 138, 110
1932	357, 000	1946	2,678, 020
1933	380, 000	1947	1, 857, 960
1934	178, 000	1948	2, 165, 370
1935	112, 700	1949	1, 789, 230
1936	772, 190	1950	2, 714, 100
1937	178, 000	1951	3, 304, 510
1938	1, 415, 087	1952	3. 680, 530
1939	1, 078, 908	1953	1, 306, 290
1940	252, 387	1954	930, 580

NATIONAL HELLS CANYON ASSOCIATION,
Portland, Oreg., March 24, 1954.

Mr. ALFRED J. RIECHERS,
Hollister, Idaho.

DEAR MR. RIECHERS: Thank you for the check in payment of your pledge through June 1954. We are sending under separate cover some recent material which has been distributed by our office.

Regarding your inquiry about the proposed Federal dam at Bliss, Idaho, the Bureau of Reclamation in February 1947 issued a report which included a dam across the Snake River at Bliss, which would have provided for irrigation of approximately 400,000 acres of the Bruneau project. The report states:

"The key structure would be the Bliss Dam across the Snake River, 500 feet high and 4,230 feet long at the crest, which would divert water to the main canal at elevation 3,100 feet. About 130 miles in length, this canal would serve approximately 300,000 acres by gravity. A pumping plant a few miles above the dam would lift water about 200 feet to a canal of 2,000 second-feet capacity. This canal would extend westward about 65 miles and would serve 100,000 acres lying higher in the project area.

"The water supply from the Snake, resulting from inflow at the large springs above Bliss, would be far in excess of that required for development of the project. The inflow from the spring is quite uniform throughout the year, averaging about 5,600,000 acre-feet annually. Annual diversions for the project would total 1,734,000 acre-feet. The 9,000 second-feet capacity of the main canal in the Bruneau project would be sufficient to carry 3,000 second-feet to mile 25, where it would be taken across the Snake River to irrigate 150,000 acres in the second unit of the Mountain Home project. This would require additional diversions of 637,000 acre-feet from Snake River."

Construction of the Bliss Dam by the Idaho Power Co. and other company projects since 1947 have, of course, eliminated any hope for the proposed future development. Construction of the Federal dam at Bliss would flood out Idaho Power Co. sites to the Thousand Springs area. The result is somewhat similar to what will occur at Hells Canyon if the company's Oxbow applications are granted, because construction of company dams would eliminate any chance of obtaining benefits from sale of power to help pay costs of the Mountain Home project.

What has happened at Bliss completely disproves the company's statement that its projects have benefited irrigation development in southern Idaho. If Idaho irrigation is to expand, the people must prevent further monopolization of the Snake by the Idaho Power Co.

If I can furnish you with additional information, please let me know.

Sincerely yours,

LLOYD TUPLING, *Manager.*

STATEMENT OF HARRY NELSON, TWIN FALLS, IDAHO, IN REGARD TO HELLS CANYON HOUSE BILL, H. R. 4719

I came to Dietrich, Idaho, in 1910, where our family had bought land from the Idaho Irrigation Co., which was at that time building the irrigation ditches on the project and completing the Magic Reservoir on Wood River. This company was also building a dam near Rogerson, Idaho, and another dam near Oakley on Goose Creek. The Magic Reservoir on Wood River was supposed to furnish water for about 150,000 acres of land in Lincoln and Gooding Counties. For the first 15 years we tried to farm and about 10 of these years there was not sufficient water to raise a paying crop. By litigation and other means the settlers of this project finally had the acreage reduced to about 75,000 acres, but even then there was not sufficient water.

After the American Falls Reservoir was built by the Reclamation Bureau they constructed a ditch from Milner which now irrigates about half of the 75,000 acres and consequently the farms on this project have an adequate water supply. Before this was done many of those that invested their life's saving lost everything they had and were compelled to leave.

This same condition has happened at the project under the dam at Rogerson and the dam at Oakley but they were not able to get water from the Snake River. A few years later a dam was built near Mackay, Idaho, on the Lost River, and water diverted to a new project from the land held by the early settlers. This project was a failure and a loss to those who bought land. The Roseworth project west of Buhl was also a failure and many people lost their life's savings.

With the exception of the Southside Twin Falls project, every irrigation project that was promoted and built by private enterprise in south central Idaho did not have adequate water and proved disastrous to the people who tried to settle on the land. In contrast to this, every project that has been planned and built by the Reclamation Bureau has proven successful, has furnished adequate water, and has insured prosperity to the farmers.

When we consider this record it seems very unwise and unfair that we should deny the Reclamation Bureau the opportunity to continue an excellent record of good work, and ask a private company to build three small dams in the central portion of the Snake River. It seems that anyone that would oppose the building of the high dam is working against the best interests of Idaho and the entire Northwest.

I personally hope that the present Congress will vote funds to start the work of building a high dam in Hells Canyon.

STATEMENT BY GUY GRAHAM, FRUITLAND, IDAHO

My name is Guy Graham. I have owned and operated a farm near Fruitland, Idaho, for over 50 years. I have been a director and manager of an irrigation canal company part of that time. I have also been State commissioner of agriculture, and have served in both branches of the Idaho Legislature several terms. I am quite familiar with most irrigation projects in Idaho. This, I think, qualifies me to give testimony on the controversial high dam at Hells Canyon.

I think it will be an economic crime not to build the high dam. It is necessary to have full development of power from the waterflow of the Snake River at this point. The Hells Canyon site is ideal for hydroelectric development—one of the best on the North American Continent.

This 700-foot high dam will back the Snake River up 93 miles, but it will not flood valuable irrigation land. It will store 4 million acre-feet of water to be used as a reserve to increase river flow in the late summer period when rivers in the Northwest are normally low.

There is an abundance of spring runoff to fill this reservoir several times each year. This spring runoff water is not used for irrigation; it goes to the ocean unused, and often causes flood damage downstream. The Snake River drainage area of south central Idaho includes a large mountainous area where the winter snowfall is heavy. This causes a heavy runoff from April to July—plenty of water for all anticipated requirements. I strongly contend that there would be no interference with irrigation water rights by the building and operating of the high dam.

Almost all (90 percent) of the land remaining to be irrigated in Idaho in the Snake River area will require the pumping of water. It will be necessary to raise this irrigation water from 100 to 300 feet above supply level. In order to do this an abundance of cheap power must be available. Where do you get cheap power but from public power development?

The Northwest is blessed with an abundance of water, the most precious thing in existence today. This water should be used to the greatest extent possible. Our area does not have oil, coal, or gas for heat or power, so we must develop all of the hydroelectric power possible.

In conclusion I will say that a project such as the high Hells Canyon Dam is self-liquidating, and will pay for all capital costs in 30 or 40 years.

STATEMENT OF PARLEY RIGBY, IDAHO FALLS, IDAHO, ON HELLS CANYON HIGH DAM AS SET OUT IN H. R. 4719

I, as a landowner in the upper Snake River Valley and a member of the chamber of commerce, am much concerned about any power dam downstream that may take away existing water rights or, of equal importance in my case, may prevent or limit the development of water for new irrigation in the future. I find that I should be, and I am much more, concerned about the effect of private power dams on my water rights than the effect of a Federal dam.

The private dams will not be required by law, Federal or State, to recognize any irrigation rights that may be established after the power rights at those dams have been estabilshed. That's where this problem of future irrigation rights in Idaho comes in.

Contrast this situation with the provisions of the Hells Canyon bill. That bill has a plain and positive provision that will prevent the Federal Government from interfering with either existing or future rights.

But, it is said, we can't trust the Congress not to change the law in the future. The fact is, though, that we have enough confidence in the Congress to protect our rights that, on the strength of the assurances by Congress, we seek permission, even clamor for, the building of Federal dams, such as Palisades, McNary, and the Dalles, and now four dams on the Colorado River.

If that is our fear, I suggest that we look at the problem as it presents itself in both kinds of dams, Federal and private.

In the case of the proposed high dam, before the United States could use its constitutional power to take either existing or future rights the specific provision of law for the protection of the water rights would have to be repealed. That would require majority action by the House and Senate. Since all the West would have a common interest in sustaining that law, are you seriously concerned about the stability of such a law for protection of water

rights? Can you point to one situation in which a provision of that kind has ever been repealed?

It is true the Idaho Power Co. has filed a voluntary statement stating they would not object to future upstream usage of water for irrigation. However, there is no statutory provision in the laws of the State of Idaho authorizing such a statement or limitation of their power filing. It would be perfectly proper and legal for them to renew their filing at a later date and cancel any statement of limitation in their original filing.

The farmers of eastern and southern Idaho in the past few years have had two experiences which should prove to them how the power companies filing can control a natural resource, for example:

1. The farmers in the upper Snake River Valley had to buy some of the power filing rights from the Utah Power & Light Co. before they could build the dam at Island Park.

2. The farmers below American Falls had to buy some of the Idaho Power Co.'s power filing rights before they could build the storage dam of American Falls.

The priority rights owned by the Idaho Power Co. for its plants at Bliss and in Hagerman Valley are of earlier date than the rights that would be available for any new upstream storage or irrigation projects. In case such new projects are built in the future the Idaho Power Co. could insist on the use of its prior right or compensation payment for same.

By all means let's make sure that our water rights, existing and future, are protected.

STATEMENT OF O. W. WITHAM, JEROME, IDAHO, ON HELLS CANYON DAM AS SET OUT IN H. R. 4719

As a citizen of the United States of America and a resident of the State of Idaho, I should like to present my views on the construction of the high dam in Hells Canyon as proposed by H. R. 4719, 84th Congress, 1st session, as presented by Congresswoman Gracie Pfost, Idaho's First District.

The decision of the FPC Examiner Costello is a complete vindication of the position long taken by high dam proponents. When this examiner found that the high dam would produce more power and operate more efficiently than any combination of private low-head structures, he found against the Idaho Power Co.'s contention. Having thus found in favor of the high dam, that it would be more efficient, to then say the "Congress would not build it" is an endeavor on the part of the Commissioner to enforce discipline when others have the authority. The issue is solved: why longer contend, why longer delay, why persist longer in delaying the building of such structure when the high dam issue in fact has been determined.

STATEMENT OF MRS. EMMA L. WITHAM, JEROME, IDAHO, ON HELLS CANYON DAM AS SET OUT IN H. R. 4719

As a citizen of the United States of America and a resident of the State of Idaho, I should like to present my views on the construction of the high dam in Hells Canyon as proposed by H. R. 4719, 84th Congress, 1st session, as presented by Congresswoman Gracie Pfost, Idaho's First District.

My husband and I own land in Jerome County in the irrigated section. At no time have we had any apprehension as to the safety of our water rights if the Government built the high multipurpose dam in Hells Canyon. The Idaho Power Co., which operates mainly in Idaho, has continually thrown fear into landowners, saying their water rights would be jeopardized. This false propaganda has been circulated among our granges. They even go so far as to hold a banquet each year in January for the newly elected Grange masters. A program follows with its cry of socialism and an insinuation that our Government is not trustworthy, hence creates a loss of confidence in the Government. In fact, performs a good job of brainwashing. With this method they, the Idaho Power Co., has succeeded in securing endorsements from many of our Grange organizations and creates an impression that all members support this program, which is far from the true facts.

For many years we have been vitally interested in the full development of our great natural resources here in the Northwest, and it has been our hope that it be developed in the interest of all the people, and the Federal Government is the only agency that has the ability to do this.

For a private corporation to come in and get the great financial benefits is not good Americanism. At present the Idaho Power Co. has almost a complete monopoly on the electric output on the great Snake River that traverses our State, and if they secure the right to build their proposed dam in Hells Canyon, the chance to curtail their dominance in this field will be lost.

Their dominance in the electrical field, as well as in State politics, is becoming distasteful to the citizens of this State.

STATEMENT OF CHRISS HESSELHOLT, CASTLEFORD, IDAHO, ON HELLS CANYON HIGH DAM AS SET OUT IN H. R. 4919

I am a farmer in Twin Falls County, owner of 106 acres of irrigated land, have lived on that since 1920 and in southern Idaho since 1910.

I am for the United States Government building the Hells Canyon Dam because it is a waste of our material resources not to develop them fully against Idaho Power Co. 60 to 70 percent of possible power output and no flood control or regulation of water for lower dams.

We farmers need more and more chemical fertilizers and only where cheap power is available we can get fertilizers at reasonable cost.

With Hells Canyon Dam built, one of the finest recreational areas in the West will be opened up.

With plenty of cheap power for pumping, more of Idaho's arid land can be reclaimed for productive farms and homes for people.

I believe the Snake River should work for all of us not just a few investors. The Idaho Power Co. owns too much of the mighty river that once belonged to all of us.

I am for the United States Government constructing this powerful dam.

Dr. MILLER. I would suggest, if I may, if this goes on and we make a sort of field day here, we might hear from everybody in the area and have quite a record for or against.

Mr. ASPINALL. We are through. As the Chair recollects, after looking over the record of the hearings in the Senate, we have done nothing more than the Senate has.

The Chair would like to call to the witness stand for just a moment those witnesses who appeared yesterday as technical witnesses. Mr. Puls, will you and your group please take the witness stand for just a moment.

The gentleman from Nebraska has one request to make of you men, and if you will listen to it and see whether or not you can meet his request, you will be excused from further attendance at the hearings.

QUESTION PERIOD OF L. G. PULS, C. I. HOISINGTON, J. R. RITER, LYNN CRANDALL, ELWYN L. WHITE, AND EARL D. OSTRANDER—Resumed

Mr. ASPINALL. The Chair recognizes the gentleman from Nebraska.

Dr. MILLER. Mr. Chairman, I wanted consent to ask the gentlemen some questions which I will present to them in writing. It seems to me the testimony that we have been given has had many blanks in it. I can outline in 2 or 3 minutes what some of the questions may be, but I will present them to you in writing.

For instance, the amount of power generated through the 3 or 4 low months. I understand there is a period of low months where you do not generate too much power.

Then I understand there has been some commitment made to Idaho relative to some 500,000 kilowatts. Would that come out of Bonneville where they are already short of power? And would Bonneville be able to furnish that power?

Another one is the differentials in the cost, for instance, between the Morrison Knudson group and your costs of construction of the three low dams. Then, if you took that into consideration, what would be the cost of electricity?

Then I think we ought to have in there some way what would be the actual cost of the electrical energy furnished by the Government if they were paying taxes like private concerns are doing.

How much you have in that construction for contingencies. I understand this is $78 million, which seems to this group, or to me at least, to be a very large sum.

Then I think we ought to know the cost of transmission lines you would have to build to handle the power out of Hells Canyon. I believe 230,000 is about as large a line as you have, maybe some a little larger. How many of those lines would there have to be to transport electricity? And what would be the cost of building them? I understand it is not in your costs.

I would like to know from the Bonneville gentleman about how many contracts you have made for public power to be sold to private groups without any preference clause, withdrawal clause. I have the list of them. I will not put them in the record at this time, but I would like to have a list from the Bonneville people.

I understand there have been many, many contracts made for public power to private groups, some of it less than the cost of production, with no clause in there for preference customers at all. The very thing the REA's and public bodies have been concerned with. I believe there are over 700 contracts that have been let since 1945 over the country, not just Bonneville alone, which have no withdrawals at all, no preference clause. I believe you have a large contract for twenty-odd years to Kaiser Aluminum Co. at less than the cost of production on your own figures for power. That is public power to private concerns. I want a full report of the power situation.

I would like to know if it is necessary to complete the dams downriver in order to get the benefits out of Hells Canyon and what the cost would be.

Then I think the other question: What is the target date if Congress passed this legislation for completing Hells Canyon? And what would be the target date if some private concern went in and started building?

I want to know the length of the powerlines from Hells Canyon to Bonneville, the cost of the powerlines. I think I have covered that before. I will write you a letter.

May I ask to whom to send the letter?

Mr. OSTRANDER. May I make an inquiry, sir? I was wondering if you plan to submit that letter to the Department and then the Department could request that we coordinate the reply.

Dr. MILLER. I want to do it in the proper form. I presume that would be the better way.

Mr. OSTRANDER. Thank you.

Dr. MILLER. And then it could be sent to you gentlemen because you have the answers out in the field, I think, more than you have here in the Department.

Mr. OSTRANDER. That is correct, sir. But the Bureau of Reclamation and the Bonneville Power Administration have worked independently on some of these materials, and it might be better if the Department made a coordinated reply.

Mr. ROGERS. Mr. Chairman, do I understand this is a unanimous-consent request?

Mr. ASPINALL. No; this is not a unanimous-consent request. This is just a little ceremony preparatory to discharging these people. Each member of the committee has the right to send such a letter as suggested by Dr. Miller.

Mr. ROGERS. Wait just 1 minute. I would like to ask a question about this, because I think it is opening the door to something that could be very dangerous. Do I understand that the answers to these questions that are going to be propounded to these witnesses by letter, without anyone having the right to cross-examine them, are going to be made a part of the record?

Mr. ASPINALL. There has not been any request made for that. The gentleman from Nebraska can include those in his statement if he wishes.

Dr. MILLER. I may later on ask that permission. I want to go over them very carefully.

Mr. ROGERS. I just wanted the record to show that.

Mr. ASPINALL. There was not any request made to have them in the record.

Mr. ROGERS. I was just making the inquiry, Mr. Chairman. I think I have the right to do that. Is that correct?

Mr. ASPINALL. Yes.

Mr. METCALF. Mr. Chairman, I feel the gentleman from Nebraska has raised several important questions that would be of interest to all of us, but orderly procedure would be to have interrogation made and, if we have the time, to have some cross-examination to bring out and clarify some of these questions. I feel if he does submit these questions to the witnesses, copies should be submitted to the other members of the committee and we should be permitted to also ask clarifying or further questions.

Mr. ASPINALL. Knowing the gentleman from Nebraska, I think I can say he will be very glad to let you see the questions and also be glad to talk over with you the answers. If he makes the request of the committee later on, he most certainly will be willing to follow that.

Mr. PILLION. A matter of inquiry, Mr. Chairman. I am still at a loss to know whether these questions are to be addressed to the Department by our colleague as a member of this committee or in his capacity as a Member of the House or to become a committee matter.

Mr. ASPINALL. He has not asked for it to become a committee matter yet; otherwise he would have to ask the chairman to submit it. He did not so ask.

Mr. ROGERS. Reserving the right to make a point of order. Then, Mr. Chairman, this has no place in this committee meeting that I can see.

Dr. MILLER. I will be glad to make it a committee matter and submit the questions to each one of you and the answers when they are

returned. I have outlined a few of the questions. I hope to get the answers to them. They are pertinent because there are big wide gaps in the testimony.

Mr. ROGERS. On the point of order, I have no objection to asking questions of anyone you want to. However, if we are going to proceed to have a hearing before the committee, it seems to me the point of order would be well taken, if it is made, that there is a regular order to be followed in the committee hearings, and I think that is what we ought to do.

Mr. ASPINALL. If the gentleman from Texas will remember, the Chair asked these gentlemen to be here this morning so that he could have them interrogated further on the opponents' time or could excuse them. That is the reason they are before the committee as of this time.

Gentlemen, we wish to thank you for your appearance before this committee. We would appreciate it if you will give us your cooperation in the future as you have in the past.

You are excused from any further attendance upon these hearings.

The Chair again wishes to state his regrets that we are not able to hear from those people from the district as fully as we would like. However, at this time the Chair understands that Mrs. Ethel Steel, appearing for the proponents, a farm operator, of Parma, Idaho, wishes to present testimony. The proponents have 17 minutes, as I suggested yesterday, and you are recognized.

Mrs. PFOST. Mr. Chairman, I would like at this time to say to my colleagues that Mrs. Steel hails from my own Canyon County. I have known her many years. She served the State of Idaho many years on the board of regents. She owns and manages several irrigated farms in Canyon County. She is one of our most substantial citizens, is a very able, a most capable person. We are delighted to have you here this morning, Mrs. Steel.

STATEMENT OF ETHEL STEEL, FARM OPERATOR, PARMA, IDAHO

Mrs. STEEL. Thank you, Mrs. Pfost. Mr. Chairman and members of the committee, my name is Ethel Steel and my home is in Canyon County, where our Congresswoman Gracie Pfost has lived most of her life. In 1892 my father-in-law, John Steel, of Omaha, Nebr., saw the fruit raised in western Idaho on exhibit at the World's Fair in Chicago. He had wanted to enter the fruit-raising business and on the train trip west in search of a location he was told that an irrigation project was being developed in Canyon County, Idaho. After looking the country over, Grandfather Steel became the first purchaser of land under the Riverside Irrigation District, Ltd., in 1895. This irrigation project was developed by J. H. Lowell and was financed by local people. It opened up a new era of prosperity in west Canyon County. Water was brought through a canal from the Boise River by gravity to irrigate 10,000 acres of land in Idaho and the neighboring State of Oregon. It was soon found, however, that in dry years there was not enough water in the river to properly irrigate the crops throughout the season. The farmers then realized that private enterprise had gone as far as it could in the matter of financing irrigation in the area. Storage was necessary and the job was too big for anyone but the Federal Government.

It was not until the National Reclamation Act was passed and the Deer Flat Reservoir and the Arrow Rock Dams were built by the Reclamation Bureau that there was enough water.

At the time Mr. Lowell was promoting these two projects, there was much criticism of him which has a familiar ring today. Those who opposed him said it was foolish to try to produce more crops—that such production would simply create surpluses and ruin the farmers. They contended that hay, then selling for $4 a ton would drop to almost nothing. Instead the additional crops of hay and grain attracted more livestock owners into the area, and the demand for feed pushed the price of hay from $4 a ton to $7 a ton.

Electricity came to us at the original Steel Ranch in 1913.

In 1920, my husband, with an idea of irrigating it as a pumping project, bought an additional 160 acres of land.

The Idaho Power Co. asked $4,000 simply to string the poles and bring electricity to us. We could not raise this sum at that time. The growth of rural electrification in the State, however, changed the power company's methods of doing business to the extent that in 1946 the company was willing to deliver electrical energy with only a down-payment of an annual charge. We were able to develop 200 acres of land for an annual payment of approximately $400. The continuation of this rate, or its lowering, will depend upon other competitive power sources.

In 1930, we required electricity on another farm. To get it we had to pay the Idaho Power Co. $250 in advance, and to guarantee a minimum annual payment of $110. We had also to give the company a lien on our property—in other words, to give them a mortgage on our farm in order to get electrical service.

Mr. Chairman, we in Canyon County feel we have everything to gain and nothing to lose by the passage of H. R. 4719, the bill introduced by our own Gracie Pfost. Some people say it will endanger our water rights. The canard that the United States Government will take away our irrigation water rights to use the water for power has been used ever since John Steel's time back in 1895. Yet not one single water right has ever been attacked in our valley, nor has there been any sustaining action in a court.

Even though I own and operate several irrigated farms upstream from Hells Canyon, I have no fear that my water rights will be in any way endangered, by construction of the high dam. I am not alone in this—many of my friends and neighbors who are water users are as anxious as I am to see the high dam built.

Thank you for your time, and your courtesy in listening to me.

Mr. BUDGE. May I ask one question?

Mr. ASPINALL. Questioning is in order.

Mr. BUDGE. I would just like to ask you this: In your history on the Snake River in Idaho, or for that matter any place else in the United States, have you ever heard of the Bureau of Reclamation proposing to build a dam below the areas to be irrigated? Did you ever hear of that any place else in the United States except in this instance?

Mrs. STEEL. No, I guess I have not. I am not too familiar with all of your reclamation projects except in our part of Idaho.

Mr. BUDGE. All of those are built above the areas to be irrigated, are they not?

Mrs. STEEL. I suppose they are. You do not want Hells Canyon to irrigate, do you?

Mr. BUDGE. No, I do not.

Mrs. STEEL. It is for storage. There is some irrigation connected with it, as I understand, up above where we are.

Mr. BUDGE. How would that be?

Mrs. STEEL. I said I just understood that.

Mrs. PFOST. Will the gentleman yield?

Mr. BUDGE. Yes.

Mrs. PFOST. I would like to answer that by saying that Lake Mead is an example.

Mr. BUDGE. Well, the Imperial Valley of California is below Lake Mead.

Mr. ASPINALL. Thank you very much.

Mr. Asher B. Wilson from Twin Falls. We have seen Mr. Wilson around these parts a good many times.

Mr. WILSON. I would not be a bit surprised. I have been coming here on matters of business since 1913.

Mr. ASPINALL. We are glad to have you back with us and recognize you for approximately 9 minutes.

STATEMENT OF ASHER B. WILSON, FARMER AND ATTORNEY, TWIN FALLS, IDAHO

Mr. WILSON. Thank you.

My name is Asher B. Wilson, 708 Shoshone Avenue in Twin Falls. I established my residence there in 1914. Shortly afterward I bought the first tract of land under the great Twin Falls Irrigation District—Twin Falls Canal Co. It is not an irrigation district.

I have not only seen but I have assisted in the development of irrigation and other resources in my State. When it came time for the development of the American Falls it was my privilege to race through my district, convince our people, many of whom did not believe we needed American Falls, that we should join in that great dam.

When we got through building the dam and our people whom we selected to operate this district went into action, there was given to the Idaho Power Co. a million dollars for the use of the fractional interest they had in the river at American Falls. It is my understanding that for this interest those people just a few years before paid the Brady interests $750,000. Yet when it was purchased by the Government—and we helped pay for it because we made contributions to that dam—a million dollars was paid for a fraction of that.

Naturally myself and others who helped to do that have not felt that the Government required these people to come down to where they belonged when they only had that kind of a right. They did not have any irrigation rights.

There has been much discussion concerning whether or not our waters would be taken away if this high Hells Canyon Dam is constructed. I have studied our constitutions, I have studied our laws, I have checked many of the cases that have to do with the operation of rivers throughout the several States. The one thing that has been harped about a great deal bears around the commerce provision of the Constitution of the United States, and here is where it comes into

the matter of the propaganda that has been put through my country on the so-called Horne Report given to my good friend and my Congressman from my district, Hamer Budge.

Mr. BUDGE. Mr. Wilson, I wish you would identify that report as what it is.

Mr. WILSON. I am going to get that in just a minute, if you will permit.

Mr. BUDGE. All right.

Mr. WILSON. This report was asked for by Congressman Budge from a man by the name of Horne who was over in the Congressional Library. They went to great lengths in explaining the different purports of the law and of the decisions and all, and Mr. Budge saw fit to write letters calling attention to certain people that the Western Water News, I believe it was, in California had published this report. And he enclosed a copy of that report in these letters he sent out together with his statement. And I received one of them through his congressional frank myself.

Now, Mr. Budge represents we the people out there. Of course, if we represented him, then the tables would be turned. And I think that Hamer went a little far, and it has been my understanding that those services in that Congressional Library were for the benefit of you people to build a background for yourself, to make statements yourself, and not to put on the spot those hirelings over there. Pardon me for calling them hirelings. They are help.

Then Congressman Gracie Pfost asked for a letter. That got shaded in the opposite direction. It is just the same as a law clerk would do for his firm. If I sent a law clerk out, I would say, "Find a favorable point for my case." Mr. Parry, on the other side, would send his clerk to look up the other. But the same clerk does not do all these acts.

That kind of propaganda has caused trouble, and I wish you people would be careful not to let that sway you.

I like Hamer. He is a good fellow. But I just cannot let that go by. Those things happened, and I think we should bring them out.

We do not have cheap power in the Twin Falls section. That whole section was developed first by some little companies which were taken over by the combination that the Idaho Power Co. made in 1916. From then on they were combined.

When I came to Twin Falls, just across the street from where I built was a home that had no chimney in it. Why? Because electricity was so cheap that they had electricity for heat. There is a chimney in that house now.

For many years we got cheap power there for heating our water or hot water for the homes. Then after a while there came a combination rate and a straight rate of one kind and another. Those are built up. Maybe they were necessary. I do not know. But we—and I am not blaming anyone else for it but myself and others—let great Shoshone Falls be developed and Twin Falls. One was within 5 miles and the other 7 miles of us. If we had that power today, public power, instead of having a levy of 57 mills as there is on my city, we probably would not have over 16 mills, like Idaho Falls does, who has public-power plants.

I am not disturbed about us becoming socialistic or anything of the sort in having public power. I believe that this is a necessity so far as the values of my State are concerned. I am not fearful that the waters

going down the stream, that they would take any of the waters away from my tract. In fact, the only water we have lost around there is where our canal board, of which Noble Sharp has been a member for many, many years, slept, did not notice that upstream at Portnuf that outfit was getting away with our water. So when an action was brought by our lawyers it was not proven we had made beneficial use of the water, and we lost some there. It was our own carelessness. Nobody else had taken it away. We were careless and slept on our rights and lost it. I believe that is the only way we will ever lose our water.

These 17 States that belong to the National Reclamation Association are banded so closely and watch the legislation so if anything came up that was going to give away our water rights these 17 States would get together regardless of political or other beliefs. And I have no doubt our water is safe. There has never been a decision yet to say otherwise, and I have not found anything in the Constitution that would let me believe they ever would take my water away from me.

I do not like to quarrel, but I do not like to be the poor fellow of the whole thing. That is what Idaho is. We are the poor one now, and because we cannot get public power. If we could get cheap power like the State of Washington has, which costs approximately one-half of what we have, we would go to town in industry down there, even though in my little locality we have an overburden of freight rate because we are not on a main line.

We produce probably the heaviest through that Snake River Valley of any valley in the United States or in the world, and give us the chance and we will continue to do so. As our population grows we have got to produce more, and it costs us very heavily now because the fertility of our soil is gone. We must by all means have fertilization. We have got fertilizer lying over there in the east end of the Snake, and if we can get cheap power we can cut that into commercial fertilizer——

Mr. ASPINALL. The time for the presentation of the proponents' testimony has expired.

Mr. Budge, do you wish to yield any of your time to interrogate?

Mr. UTT. Mr. Chairman, I very strenuously object to any witness criticizing any member of this committee and impugning his motives as appear in the statement here, and I think it is out of order.

Mr. WILSON. Pardon me, but——

Mr. ASPINALL. Just a minute. There is going to be no more of this. Mr. Budge has the time to do with as he sees fit.

Mr. BUDGE. Mr. Chairman, I wish to use just a few minutes here to clarify a couple of things.

To start with, I am going to ask unanimous consent that the report to which Mr. Wilson referred be included at this point in the record.

Mr. ASPINALL. The gentleman has that right. Is there any objection?

Mr. EDMONDSON. Reserving the right to object, with the understanding that the report by Mrs. Pfost be also included?

Mr. ASPINALL. Yes.

Mr. WILSON. Both his and Gracie's are to go in.

Mr. ASPINALL. Mr. Wilson, I do not like for you to speak informally.

The Chair would appreciate it if you would refer with a little bit more courtesy to the members of the committee.

Mr. WILSON. I am sorry, sir. I will attempt to do that. I seldom get to see either one of them, and at home I know them both very well by their first name.

Mr. BUDGE. That is true. I have known the witness for a good many years.

(The reports referred to follow:)

THE LIBRARY OF CONGRESS,
LEGISLATIVE REFERENCE SERVICE, AMERICAN LAW DIVISION,
Washington 25, D. C., March 23, 1954.

To: Hon. Hamer H. Budge.

Subject: Protection of present and future diversions in construction of flood control and power on navigable rivers.

By letter of January 30, 1954, you have transmitted a copy of an address by Mr. Fred M. Taylor dated September 10, 1947, and supplemental material entitled "Analysis of the Hells Canyon bills" (S. 1664, H. R. 4648, 4649, and 4650, 83d Cong.). You have invited attention to pages 532–543, 744–755 (particularly pp. 751–752), and 776–784 (particularly pp. 780–784) of the hearings (82d Cong.) on the Hells Canyon project. You then ask three questions, and indicate a fourth, which we will state and attempt to answer or give comment.

In attempting to formulate answers and in commenting, we have sought to confine our statements to the constitutional and legal aspects of the problem. We intend to avoid, if possible, statements which will involve us in the controversy concerning the relative merits of the proposal, or the policies which govern their consideration. Thus limiting this memorandum, we state your problems and reply preliminarily and generally as follows:

"(1) If a dam is constructed by the Bureau of Reclamation or the Corps of Army Engineers wherein there is no claimed reclamation of arid land and the project is built solely for purposes of flood control, navigation, and hydroelectric power, would the language contained in H. R. 5743 or in the subsequent H. R. 4648 of the 83d Congress protect either or both present or future diversions of the waters of the river upstream from the dam as authorized under State law?"

We are not certain of the meaning you attach to the word "protect" in your question. Ostensibly the language commencing at line 17 on page 6 of H. R. 2948 would recognize or accept as controlling presently applicable State and Federal law. This is the extent of Federal protection now afforded in other smilar cases. If, however, you mean a preclusion of all possibility of future Federal legislation based on the exercise of constitutional powers, as presently construed by the Supreme Court, then the answer must be in the negative. This will be brought out later in the general statement.

"(2) The same question when the legislation claims reclamation benefits and States reclamation as a purpose of the legislation, but when there are in fact no reclamation benefits which could result from the legislation."

We seriously doubt if a successful attack on the proposed legislation can be based on the absence of reclamation benefits. The bills recite the purposes as "controlling and utilizing the waters of the Snake River and its tributaries for beneficial objects, including generation of hydroelectric power and energy for the national defense, and other purposes, irrigation of lands, navigation, and flood control, and for purposes incidental to any of the foregoing, including providing assistance to Federal Reclamation projects * * *." (See H. R. 4648, 4649, 4650, 83d Cong.) Our doubt is based on the summary rejection of the claim of Arizona, in its suit against California, that the recital in the Boulder Canyon Project Act of December 21, 1928 (45 Stat. 1057), that one of the purposes was "improvement of navigation" was a "mere subterfuge and false pretense." Said the Court:

"Into the motives which induced Members of Congress to enact the Boulder Canyon Project Act, this Court may not enquire. (*McGray* v. *United States*, 195 U. S. 27, 53–59; *Weber* v. *Freed*, 239 U. S. 325, 329–30; *Wilson* v. *New*, 243 U. S. 332, 358–59; *United States* v. *Doremus*, 249 U. S. 86, 93–94; *Dakota Central Tel. Co.* v. *South Dakota*, 250 U. S. 163, 187; *Hamilton* v. *Kentucky Distilleries Co.*, 251 U. S. 146, 161; *Smith* v. *Kansas City Title and Trust Co.*, 255 U. S. 180, 210.) The act declares that the authority to construct the dam and reservoir is conferred, among other things, for the purpose of 'improving navigation and regulating the flow of the river.' As the river is navigable and the means which the act provides are not unrelated to the control of navigation (*United States* v.

River Rouge Improvement Co., 269 U. S. 411, 419), the erection and maintenance of such dam and reservoir are clearly within the powers conferred upon Congress. Whether the particular structures proposed are reasonably necessary, is not for this Court to determine. (Compare *Fong Yue Ting* v. *United States*, 149 U. S. 698, 712–14; *Oceanic Steam Navigation Co.* v. *Stranaham*, 214 U. S. 320, 340; *United States* v. *Chandler-Dunbar Water Power Co.*, 229 U. S. 53, 65, 72–73; *Everard's Breweries* v. *Day*, 265 U. S. 545, 559.) And the fact that purposes other than navigation will also be served could not invalidate the exercise of the authority conferred, even if those other purposes would not alone have justified an exercise of congressional power. (Compare *Veazie Bank* v. *Fenno*, 8 Wall. 533, 548; *Kaukauna Water Power Co.* v. *Green Bay and Mississippi Canal Co.*, 142 U. S. 254, 275; *In re Kollock*, 165 U. S. 526, 536; *Weber* v. *Freed, supra; United States* v. *Doremus*, supra.)

"It is urged that the Court is not bound by the recital of purposes in the act: that we should determine the purpose from its probable effect and that the effect of the project will be to take out of the river, now nonnavigable through lack of water, the last half of its remaining average flow. But the act specifies that the dam shall be used: 'First, for river regulation, improvement of navigation and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights * * *; and third, for power.' It is true that the authority conferred is stated to be 'subject to the Colorado River compact,' and that instrument makes the improvement of navigation subservient to all other purposes. But the specific statement of primary purpose in the act governs the general references to the compact. This Court may not assume that Congress had not purpose to aid navigation, and that its real intention was that the stored water shall be so used as to defeat the declared primary purpose. Moreover, unless and until the stored water, which will consist largely of floodwaters now wasted, is consumed in new irrigration projects or in domestic use, substantially all of it will be available for the improvement of navigation. The possible abuse of the power to regulate navigation is not an argument against its existence. (*Lottery Case*, 188 U. S. 321, 363; *Flint* v. *Stone Tracy Co.*, 220 U. S. 107, 168–69; *Wilson* v. *New*, 243 U. S. 332, 354; *Hamilton* v. *Kentucky Distilleries*, supra; *Alaska Fish Salting and By-Products Co.* v. *Smith*, 255 U. S. 44, 48.)

"Since the grant of authority to build the dam and reservoir is valid as an exercise of the constitutional power to improve navigation, we have no occasion to decide whether the authority to construct the dam and reservoir might not also have been constitutionally conferred for the specified purpose of irrigating public lands of the United States. (Compare *United States* v. *Rio Grande Dam and Irrigation Co.*, 174 U. S. 690, 703; *United States* v. *Alford*, 274 U. S. 264.) Or for the specified purpose of regulating the flow and preventing the floods in this interstate river. Or as a means of conserving and apportioning its waters among the States equitably entitled thereto. Or for purpose of performing international obligations (compare *Missouri* v. *Holland*, 252 U. S. 416)."

See *Arizona* v. *California* ((1931) 283 U. S. 423, 455–458).

The determination of the necessity for a given improvement of navigable capacity, and the character and extent of that improvement, is for Congress to decide. *U. S.* v. *Chicago, Milwaukee, St. Paul and Pacific Railroad Co.* ((1941) 312 U. S. 592). Congress has the power of legislation and, therefore, the power of passing judgment upon the needs of a complex society. *Polish National Alliance* v. *N. L. R. B.* ((1944) 322 U. S. 643).

"(3) In both of the above I am particularly interested as to whether or not the building of a project under (1) or (2) above places the operation of the river under the commerce and navigation clauses of the Constitution of the United States so that the restrictive language as to upstream diversion and use might be unconstitutional under the commerce and navigation clauses, as is apparently the conclusion of the enclosures."

We do not believe the restrictive language in question necessarily would be held to be unconstitutional. It is true that since *Gibbons* v. *Ogden* (1824) 9 Wheat. 1) Federal regulation of navigation based on the commerce clause of the Constitution (art. I, sec. 8, clause 3), has prevailed over State regulation. However, the commerce power is not necessarily self-executing, but must be exercised in many cases by an act of Congress. It is well established that States cannot unduly burden commerce in the absence of Federal regulation, the supposition being that nonregulation indicates a will on the part of Congress that the subject shall be free from restriction. (See *Robbins* v. *Shelby County Taxing Dist.*

(1887) 120 U. S. 489, 493; *U. S.* v. *Rio Grande Dam and Irrigation Co.* (1889) 174 U. S. 690, etc.) We do not believe an exposition of that principle is essential to this memorandum.

We do not read Mr. Taylor's address as arguing that the restrictions are unconstitutional. Rather, he is recognizing constitutional principles, but is arguing against further extension of Federal "integrated water control" based on those principles. He obviously is discussing policy and is taking a dim view of its extension as based on those principles. Be that as it may, we respectfully suggest that the principles can be tolerated if the policy applied is the right policy.

The principles troubling Mr. Taylor are largely those enunciated in the following key decisions of the United States Supreme Court; *U. S.* v. *Appalachian Power Co.* ((1940) 311 U. S. 377); *Oklahoma* v. *Guy F. Atkinson Co. et al.* ((1941) 313 U. S. 508); and *First Iowa Hydro-electric Cooperative* v. *Federal Power Commission* ((1946) 328 U. S. 152). A discussion of these cases will appear later in the general statement.

"(4) If the language in H. R. 5743 or H. R. 4648 does not protect both present and future upstream diversion and use when a conflict arises between such upstream diversion and use and the operation of the Federal dam, is there other language which could be placed in the authorizing legislation which would protect both present and future upstream diversion and use?"

We are unable to state that the language of these bills would not protect both present and future diversions. It would protect such diversions to the extent that other areas are now similarly protected by similar provisions. Such protection, as we have heretofore indicated, is not absolute, and cannot be absolute, because of the constitutional powers of Congress that are involved. In view of past decisions of the Supreme Court, a constitutional amendment would be required to divest Congress of its power and vest complete control of these water resources of navigable rivers in the States. Under the circumstances we see no alternative to existing arrangements or improved variations of those arrangements. Control, if there is to be further development and use of the water resources, must come in many instances through 1 of 3 methods: (1) Federal legislation, (2) compact, or (3) adjudication by the Supreme Court. Federal legislation recognizing State laws, to the extent practicable, and authorizing compacts may be the better solution. Adjudication, by a series of Supreme Court decisions, would in effect ultimately place that court in the undesirable position of administering the water rights of the area.

GENERAL STATEMENT

Article XV of the constitution of Idaho declares that the use of water appropriated for sale, rental, or distribution is a public use and subject to the regulation and control of the State. The right to divert unappropriated waters of natural streams to beneficial use may not be denied except to the extent that the State may regulate and limit their use for power purposes. Priority gives the better right except that where waters of a stream are insufficient for all uses, preferences are given to domestic, agricultural, and manufacturing purposes, in that order.

The statutory law of Idaho declares all waters in natural channels, including springs and lakes, to be the property of the State, subject to diversion for appropriation and allotment for beneficial purposes. A right of use, however, shall not be considerd a property right in itself, but shall be appurtenant to the land. (Idaho Code (1947), secs. 42–101 to 42–104.) This is consonant to a certain extent with existing acts of Congress such as section 8 of the Reclamation Act of June 17, 1902 (32 Stat. 390; U. S. G. 43:383), relating to conformity with State laws; section 1 of the Flood Control Act of 1944 (58 Stat. 891); and subsection 3 (e) of the Submerged Lands Act of 1953 (Public Law 31, 83d Cong.). However, any claim of State ownership of water must be reconciled with Federal constitutional power.

To be considered, therefore, in connection with the foregoing constitutional and statutory provisions of the State of Idaho is the supremacy clause of the Constitution of the United States found in clause 2 of article VI. That clause states that the Constitution of the United States and the laws of the United States which shall be made in pursuance thereof shall be the supreme law of the land, and the judges in every State shall be bound thereby anything in the Constitution or laws of any State to the contrary notwithstanding. The United States Supreme Court has used this clause on numerous occasions to strike down provisions of the State constitutions and State laws. For example, see *Chicago, St. Paul, Minneapolis and Omaha Railway Company* v. *Latta* ((1913) 226 U. S. 519), voiding the applica-

tion of a provision of the Nebraska constitution; *International Harvester Company of America* v. *Kentucky* ((1914) 234 U. S. 216), voiding the application of a provision in the Kentucky constitution of 1891; *Guinn* v. *U. S.* ((1915) 238 U. S. 347), voiding a provision of the Oklahoma constitution; and *Hawke* v. *Smith* ((1920) 253 U. S. 221 and 231), voiding certain applications of a provision of the Ohio constitution. This supremacy has been recognized and applied by State courts. See for example *Harbert* v. *Harrison County Court* ((West Virginia, 1946) 39 S. E. 2d 177, 184), and *Gray* v. *Moss* ((Florida, 1934) 156 Southern 262). Thus it is too well settled for argument that if Congress enacts a law or amends a law in the exercise of a constitutional grant of power, State constitutional and statutory provisions in conflict with that law or its amendment cannot prevail.

This brings us to the main question underlying this whole problem, which, as we see it, can be stated bluntly as follows: In the event, after the authorization and construction of the Hells Canyon division, there is insufficient downstream flow for its operation, could the Congress in the exercise of constitutional powers, require release of waters from above and thus curtail beneficial use, under applicable State and other laws, in those upper areas? (See hearings * * * on H. R. 5743 (82d Cong.) p. 782.) Based on applicable court decisions, the answer is in the affirmative.

The question is not unique. It is present, we believe, on all the major western river systems. For the purposes of this memorandum we need not speculate on the problems which might be created if Congress were to so legislate and thereby upset the water rights and the applicable law of an entire area. It must be admitted that the question is implicit in the conclusions, stated on page 7 of the Analysis of the Hells Canyon Bills disputing the relative amounts of water to be committed to irrigation and to power.

Our conclusions, based on our study, more nearly coincide with the legal propositions stated by Mr. Taylor. However, we do not intend that this admission shall be considered as approval of the arguments which he based on those principles, or of his statements concerning policy matters.

Having answered preliminarily the questions raised, we set forth for your considerations the general principles and precedents bearing on those questions.

NAVIGABILITY

The first landmark decision of the Supreme Court on this subject did not formulate a general test for determining navigability. It merely announced the broad doctrine that the power to regulate commerce "comprehends navigation, within the limits of every State in the Union." *Gibbons* v. *Ogden* ((1824) 9 Wheat. 1).

One writer on the subject recently has stated that the difficulties in ascertaining navigability, within the meaning of a pertinent law, are due not only to lack of uniformity in geographical conditions and inadequate factual data respecting particular bodies of water, but also to the shortcomings of the system of rules of substantive law formulated by the courts. Laurent, Judicial Criteria of Navigability in Federal Cases (1953 Wis. L. R. 8):

"Acting under the commerce power, Congress has appropriated funds for engineering surveys; has legislated to control the placing of artificial obstructions in rivers and harbors; has provided for the dredging of channels and the construction of dams and other types of improvements for the purpose of increasing navigable depths; has provided for the construction of flood-control works; and has provided for the development of multiple-purpose projects.

"The power of Congress is, however, limited to waters which are navigable in law for the purposes of interstate and foreign commerce, and to nonnavigable tributaries of such navigable waters insofar as the control and utilization of the flow of the tributaries will affect the navigable waters below [*Oklahoma ex rel. Phillips* v. *Guy F. Atkinson Co.* (313 U. S. 508 (1941)); *United States* v. *Appalachian Electric Power Co.* (311 U. S. 377 (1940)); *Arizona* v. *California* (283 U. S. 423 (1931)); *United States* v. *Rio Grande Dam and Irrigation Co.* (174 U. S. 690 (1899)). See also, *Escanaba Co.* v. *Chicago* (107 U. S. 678, 682 (1882)).] Within these limits the rights and powers of the States and of riparian proprietors are subservient to the interests of interstate and foreign commerce. It follows, therefore, that when Congrss undertakes to authorize a program of navigation regulation or improvement within the limits of a particular body of water, the legality of the program will depend, in whole or in part, upon a determination respecting the navigability of such body of water or of the navigability of the inland waters to which it is tributary." [Id., pp. 11–12.]

Even navigable rivers of the United States which have been dammed or canalized are said to remain navigable waters notwithstanding these changes. *U. S.* v. *Cress* ((1917) 243 U. S. 316). Once a river has met the test of navigability, its character is not lost by reason of a discontinuance of commercial use resulting from changed economic conditions or the placing of artificial obstructions in its channel. *Economy Light Co.* v. *U. S.* ((1921) 256 U. S. 113).

In *Scott* v. *Lattig* ((1913) 227 U. S. 29), the United States Supreme Court stated:

The * * * Snake River is a navigable stream and at the place in question is the boundary between the States of Oregon and Idaho * * * (p. 239).

"* * * [It] was settled long ago by this Court, upon a consideration of the relative rights and powers of the Federal and State Governments under the Constitution, that lands underlying navigable waters within the several States belong to the respective States in virtue of their sovereignty and may be used and disposed of as they may direct, subject always to the rights of the public in such waters and to the paramount power of Congress to control their navigation so far as may be necessary for the regulation of commerce among the States and with foreign nations * * * (pp. 242–243)."

Years earlier in *Gillman* v. *Philadelphia* ((1866) 3 Wall. 713, 724), the Supreme Court had said:

"Commerce includes navigation. The power to regulate commerce comprehends the control for that purpose, and to the extent necessary, of all the navigable waters of the United States which are accessible from a State other than those in which they lie. For this purpose they are the public property of the Nation, and subject to all the requisite legislation by Congress. This necessarily includes the power to keep them open and free from any obstructions to their navigation, interposed by the States or otherwise; to remove such obstructions when they exist; and to provide, by such sanctions as they may deem proper, against the occurrence of the evil and for the punishment of offenders. For these purposes, Congress possesses all the powers which existed in the States before the adoption of the national Constitution, and which have always existed in the Parliament in England.

"It is for Congress to determine when its full power shall be brought into activity, and as to the regulations and sanctions which shall be provided."

In the same year of the decision in *Scott* v. *Lattig*, supra, the Supreme Court in *United States* v. *Chandler-Dunbar Co.* ((1913) 229 U. S. 53, 76), indicated a probable limit on compensation where navigable waters are involved, saying:

"Having decided that the Chandler-Dunbar Co. as riparian owners had no such vested property right in the waterpower inherent in the falls and rapids of the river, and no right to place in the river the works essential to any practical use of the flow of the river, the Government cannot be justly required to pay for an element of value which did not inhere in these parcels as upland. The Government had dominion over the water power of the rapids and falls and cannot be required to pay any hypothetical additional value to a riparian owner who had no right to appropriate the current to his own commercial use. These additional values represent, therefore, no actual loss and there would be no justice in paying for a loss suffered by no one in fact. "The requirement of the fifth amendment is satisfied when the owner is paid for what is taken from him. The question is what has the owner lost, and not what has the taker gained." *Boston Chamber of Commerce* v. *Boston* (217 U. S. 189, 194, 195)."

In *Federal Power Commission* v. *Niagara Mohawk Corp.* ((1954) 22 L. W. 4162), the Supreme Court currently said the most significant issue raised was whether the Federal Water Power Act of 1920 (41 Stat. 1063, as amended, by 49 Stat. 863; U. S. C. 16: 791a–825r), had abolished private proprietary rights, existing under State law, to use waters of a navigable stream for power purposes. It characterized the rights of the power company as "usufructuary rights to use the water for the generation of power, as distinguished from claims to the legal ownership of the running water itself."

"We conclude, as did the court of appeals, that, even though the respondent's water rights are of a kind that is within the scope of the Government's dominant servitude, the Government has not exercised its power to abolish them.

"* * * * * * * *

"The act treats usufructuary rights like other property rights. While leaving the way open for the exercise of the Federal servitude and of Federal rights of purchase or condemnation, there is no purpose expressed to seize, abolish, or eliminate water right without compensation merely by force of the act itself."

You will note that the Supreme Court said that Congress had not abolished or eliminated the water rights. It did not say that Congress could not do this.

We believe that a general statement of what we have found concerning jurisdiction of the Federal Government over navigable streams, and flood control will answer part E of the memorandum in the hearings * * * on H. R. 5743 (82d Cong.) pages 751–752, to which you have referred. This statement, taken from an incomplete study prepared earlier for the Senate Committee on Interior and Insular Affairs, and slightly revised, follows.

NAVIGATION AND FLOOD CONTROL

Use of waters of navigable streams raises a question of the applicability of section 8 of the Reclamation Act of 1902. In 1905, an opinion of the Assistant Attorney General (*California Land Development Co.*, 33 L. D. 391, 405) stated that the Congress has control over navigable streams and their waters. Accordingly, no claim, based on an appropriation of waters in a navigable stream for irrigation and made without the approval of Congress, would be recognized by the Department of Justice as valid.

Apparently it has been the general practice of the United States to make appropriations from nonnavigable streams in accordance with section 8. However, the 1938 addition of the Manual of the Reclamation Service states that this section of the law is directory, not mandatory, and that the United States need not follow State appropriation laws because it is the owner of all unappropriated water in the nonnavigable streams of the arid west (p. 362). This proposition was not sustained or actually ruled on in *Nebraska* v. *Wyoming* ((1945) 325 U. S. 589). It was merely assumed for the purposes of argument (id., p. 611). Applying the policies established legislatively by section 8, the Supreme Court said that this property right in a water right was separate and distinct from the property right in the irrigation works. Under the law, the water right is appurtenant to the land, the owner of which is the appropriator. Thus, even if it were assumed that the United States owned the unappropriated water rights, they could be acquired by private owners in the precise manner contemplated by Congress (id., p. 615). The question of ownership by the United States of unappropriated water, therefore, was held to be largely academic so far as the issues of the suit were concerned. Indeed, the same question was passed over in *U. S.* v. *Gerlach Co. et al.* ((1950) 339 U. S. 725, 739), the Court stating: "* * * we need not ponder whether, by virtue of a highly fictional navigation purpose, the Government could destroy the flow of a navigable stream and carry away its waters for sale to private interests without compensation to those [riparians] deprived of them." See also *Niagara Mohawk Power Corp.* v. *F. P. C.* ((1952) 202 F. 2d 190; id. (1954) 22 L. W. 4162).

A somewhat difficult problem will arise in an instance where Congress determines that commerce no longer requires that navigability in fact be maintained on a particular river, or, that navigability does not require the total natural flow, or that flood control, for maintaining navigability, requires temporary storage of excess waters which may be appropriated when released. If navigability in fact is destroyed or excess waters are impounded for future release, are appropriations of these waters to be made under section 8? Section 8 of the Flood Control Act of 1944 (58 Stat. 891), could be said to answer the question affirmatively. However, we have found no definitive answer. Having destroyed navigability, the logical assumption would be that Congress thereby also would have relinquished claim to control. However, this assumption appears not to be supported by practice or by authoritative writings.

It is the purpose of this section to examine briefly the extent of Federal control of waters of navigable streams where such control might conflict with appropriation, distribution, and use of such waters for irrigation and other uses under State laws. The question of actual navigability, under presently applicable decisions of the Supreme Court, appears to be important only insofar as it is capable of resolution in favor of the Federal Government. The power of Congress to regulate navigable waters is not expressly granted in the Constitution, but is a power incidental to the express power to regulate commerce. *Leovy* v. *U. S.* ((1900) 177 U. S. 621, 632). Title to the shore and submerged soil is subject to this servitude. *Gibson* v. *U. S.* ((1897) 166 U. S. 269) and other cases. If navigability is established, the problem will be resolved, in all probability, on that basis. However, if that fact is not established, it is not of controlling consequence for the court decisions indicate that resort may be had to numerous other bases, such as the powers relating to war or national defense, flood control, public

lands, treaties, general welfare, etc., in supporting the development or control of the stream. Waterpower thus appears to be primarily a Federal question, not a State question. (Geo. Wash. L. R. (1941) 9:727, 732.) To be considered is a statement of the Supreme Court "* * * that the running water in a great navigable stream is capable of private ownership is inconceivable." (*U. S.* v. *Chandler-Dunbar Co.* ((1913) 229 U. S. 53, 69).)

(*a*) *Basic power*

As stated above, the power of the United States over its waters, which are capable of use as interstate highways, arises largely from article I, section 8, clause 3 of the Constitution of the United States which says that "Congress shall have power * * * To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes." Earlier decisions held that this power to regulate commerce necessarily included the power over navigation. See *Gibbons* v. *Ogden* ((1824) 9 Wheat. 1, 189) and also *Leovy* v. *U. S.*, supra. Under this power Congress could legislate to forbid or to license dams in the navigable streams of the United States. *Willson* v. *The Black-bird Creek Marsh Co.* ((1829) 2 Pet. 245, 250); *U. S.* v. *Rio Grande Dam and Irrigation Co.* ((1899) 174 U. S. 590, 703). At one time the general rule, that navigability in fact constituted navigability in law, prevailed. The *Daniel Ball* ((1871) 10 Wall. 557); The *Montello* ((1874) 20 Wall. 430). However, as Federal control expanded the courts noted technical distinctions so that the term "navigable rivers" included (1) waters which were arteries of commerce at any past date in American history (*Economy Light and Power Co.* v. *U. S.* ((1921) 256 U. S. 113), (2) streams improved by works appropriated for by Congress (*Ashwander* v. *T. V. A.* ((1936) 297 U. S. 288, 328), and (3) streams potentially capable of serving as a means of transportation (*U. S.* v. *Utah* (1931) 283 U. S. 64; *Ne-Bo-Shone Ass'n* v. *Hogarth* (1936) 81 F. 2d 70). "That the general rule of navigability was not only extended, but actually departed from, and a new concept of navigability was created, was established by the Supreme Court in *Arizona* v. *California* ((1931) 283 U. S. 423). There the mere congressional declaration that the * * * Colorado River was, in fact, navigable was held sufficient to justify Federal control despite the unanimous testimony of experts to the contrary * * * (Temple Law Quarterly (February 1941) 15: 304, 306 citing art. IV of the Colorado River Compact, H. Doc. No. 605, 67th Cong., p. 10).

(*b*) *The more recent applications*

Article IV of the Colorado River compact stated, among other things, that inasmuch as "the Colorado River has ceased to be navigable for commerce * * * the use of its waters for purposes of navigation shall be subservient to the uses of such waters for domestic, agricultural, and power purposes." The Boulder Canyon Project Act of December 21, 1938 (45 Stat. 1057), authorized the Secretary of the Interior to construct and operate a dam at Boulder Canyon "* * * for the purpose of controlling floods, improving navigation, and regulating the flow of the Colorado River * * *." These variations gave the Supreme Court no difficulty, for in *U. S.* v. *Arizona* ((1935) 295 U. S. 174, 183) it stated:

"1. The bill alleges that the stretch of the Colorado between Arizona and California is navigable, and the motion to dismiss is dealt with on that basis. Arizona owns the part of the riverbed that is east of the thread of the stream (*New Jersey* v. *Delaware*, 291 U. S. 361, 379 et seq.). Her jurisdiction in respect of the appropriation, use, and distribution of an equitable share of the waters flowing therein is unaffected by the compact or Federal reclamation law. But the title of the State is held subject to the power granted to Congress by the commerce clause, *United States* v. *Holt State Bank* (270 U. S. 49, 54–55), and under that clause Congress has power to cause to be built a dam across the river in aid of navigation. The Boulder Canyon Project Act is an example of the exertion of that power. *Arizona* v. *California*, *supra* [283 U. S. 423], 451, 455–457 * * *."

U. S. v. *Appalachian Electric Power Co.* ((1940) 311 U. S. 377) goes further. That case involved an attempt on the part of the United States to enjoin the construction of a dam on the New River above Radford, Va., on the ground that no Federal license had been obtained pursuant to the Federal Water Power Act (41 Stat. 106) as amended. Both lower courts, relying on the Daniel Ball, supra, held that the river was nonnavigable and, therefore, no Federal license was required. See 23 Federal Supplement 83, 98, and 107 Federal Reporter, second series, 769, 780. In reversing, the Supreme Court accepted the contention that it is proper to use as a test of navigability the feasibility of interstate use after reasonable improvements which might be made. See *Arizona* v. *California*

((1931) 283 U. S. 423) and *Ashwander* v. *T. V. A., supra.* One student commented that the way is open for eventual preeminence of the Federal Government in the hydroelectric power business. (See Boston U. L. R. (April 1941) 21: 344, 348; see also Tulane L. R. (1940) 14: 621; and Calif. L. R. (1941) 29: 761.)

Oklahoma ex rel. Phillips, Governor v. *Guy F. Atkinson Co. et al.* ((1941) 313 U. S. 508) was the consequence of an attempt on the part of the State of Oklahoma to enjoin the construction of a dam on the Red River in Texas and Oklahoma authorized by the act of June 28, 1938 (52 Stat. 1215). The greater part of the dam was to rest on Oklahoma soil and the reservoir created would inundate about 150,000 acres of land of which 100,000 were in the State of Oklahoma. Of these, about 3,800 acres were State owned and used for schools, prison farms, highways, bridges, etc. The involved basin contained 8,000 Oklahoma citizens and much of the land was rich soil and highly productive. Fifty thousand acres were underlaid with oil and gas. The annual wealth production to the citizens of Oklahoma was about $1,500,000. Losses of revenue from oil, personal property, etc., to counties, townships, and school districts amounted to $40,000 annually.

Oklahoma alleged, in seeking the injunction, that the construction of the dam would be a direct invasion and obstruction of sovereign proprietary rights of the State. In fact, approximately 40 miles of the State boundary would be obliterated. Further, the hydroelectric power to be generated would be sold principally in Texas. For this purpose the first 110 feet were to be used exclusively and only the 40 feet superimposed on the power reservoir were solely and exclusively for flood control. Oklahoma alleged that no part of the Red River in Oklahoma was navigable and that proceedings accordingly under the act were unconstitutional and violative of the 10th amendment, which reserved to the State nondelegated powers. It further alleged that the project in no way improved navigability of the Red River or the Mississippi River. All of these contentions were summarily disposed of by the Court with the general statement: "We are of the view that the Dennison Dam and Reservoir project is a valid exercise of the commerce power by Congress" (p. 516). The Court noted that the project was part of a comprehensive program for flood control of the Mississippi. Floods, it said, pay no respect to State lines. They occasion high crop damage, loss of buildings and livestock, pollution of fertile fields, erosion of rich farmlands, interruption of navigation, injury to port facilities, interruption or stoppage of interstate transportation by rail, truck, and motor car, and they cause pestilence and death (pp. 516–521). Single States are impotent to cope with them.

Citing and quoting *Oklahoma* v. *Texas* ((1922) 258 U. S. 574, 591) the Court said it is true that no part of the Red River in Oklahoma is navigable. However, "the fact that portions of the river are no longer used for commerce does not dilute the power of Congress over them" (*Economy Light and Power Co.* v. *U. S., supra; U. S.* v. *Appalachian Power Co., supra*). "And it is clear that Congress may exercise its control over the nonnavigable stretches of a river in order to preserve or promote commerce on the navigable portions" (*Oklahoma ex rel. Phillips, Governor* v. *Guy F. Atkinson Co. et al., supra*, p. 523). There is no constitutional reason, said the Court, why Congress or the courts should be blind to the engineering prospects of protecting the arteries of commerce of the Nation through control of the watersheds. Further, there is no reason why Congress cannot, under the commerce power, treat the watersheds as a key to flood control on navigable streams and their tributaries. Thus, the power of flood control extends to the tributaries and navigable streams (id., p. 525). Conjectural problems relating to the value of the project, therefore, do not raise constitutional issues but questions of policy and it is for Congress alone to decide whether a particular project, by itself or as a part of a more comprehensive stream, will have such a beneficial effect on the arteries of interstate commerce as to warrant its authorization. It is not for the Court to determine whether the resulting benefit to commerce, as a result of a particular exercise by Congress of the commerce power, outweighs the cost of the undertaking (id., p. 528; *Arizona* v. *California* (1931) 283 U. S. 423, 456–457, and *Ashwander* v. *T. V. A., supra*, 329–330). It is sufficient for the Court that Congress has exercised its commerce power. The fact that ends other than flood control will be served, or that flood control will be relatively of lesser importance, does not invalidate the exercise of the authority conferred by the Constitution on Congress.

Applying the foregoing principles, the Supreme Court has specifically held that since the construction of the Dennison Dam was a valid exercise by Congress of the commerce power, there was no unconstitutional interference with the sov-

ereignty of the State of Oklahoma. The fact that the land was owned by the State was no barrier to its condemnation by the United States. Possible adverse effect on the tax revenues of Oklahoma, as a result of the exercise of the power of eminent domain, was no barrier to the exercise of that power, nor was the objection to the obliteration of a boundary or the interference with the State's own program of water development and conservation of any avail. According to the Supreme Court, such a program must bow to the "superior power" of Congress. Citing *U. S.* v. *Rio Grande Dam and Irrigation Co., supra; New Jersey* v. *Sargent* ((1926) 269 U. S. 328, 337); and *Arizona* v. *California* ((1936) 208 U. S. 558, 569).

According to one student of the law, under the holding in *Oklahoma ex rel. Phillips, Governor* v. *Guy F. Atkinson Co. et. al., supra*, Federal jurisdiction extends to nonnavigable tributaries of navigable streams and supports construction of flood control and water power projects as an exercise of the commerce power. Further, any river in the United States can be deemed a tributary to a navigable one, and the Federal Government can build an interstate power dam on every stream (see U. Pa. L. Rev. 90: 102–104). Classic definitions of navigability have been ignored, he states, citing *The Daniel Ball, supra; U. S.* v. *Doughton* ((1921) Harv. L. Rev. 35: 154) "The * * * time seems to be at hand for the court to disregard the fiction of navigability and assert jurisdiction on the clearer ground of interstate transmission of power" (id., p. 104).

First Iowa Hydro-Electric Cooperative v. *F. P. C.* ((1946) 328 U. S. 152) involved an application filed by the cooperative on April 2, 1941 for a license to build an 8,300 feet earthen dam, on the Cedar River in Iowa, for diverting water through an 8-mile diversion canal to a powerplant built on the Mississippi River. The State of Iowa intervened claiming that the cooperative should also present satisfactory evidence of its compliance with Iowa law, and a permit from the State Executive Council of Iowa for the same project. Iowa statutory policy, as interpreted by the State, opposed diversion from one river to another. Believing that the courts should settle the issue, the FPC ordered a dismissal of the application for the permit pending a determination of the validity of the requirements of the State law. The dismissal was affirmed by the United States Court of Appeals for the District of Columbia (151 F. 2d 20) but was reversed by the Supreme Court.

Holding that the State of Iowa could not block construction of the project by refusing to issue a State permit, the Supreme Court said that to require the cooperative to secure the actual grant to it of such a permit under State law, as a condition precedent to securing a Federal license for the same project under the Federal Power Act, would vest in the Executive Council of Iowa a veto power over a Federal project.

"If a State permit is not required, there is no justification for requiring the petitioner, as a condition of securing its Federal permit, to present evidence of the petitioner's compliance with the requirements of the State code for a State permit. Compliance with State requirements that are in conflict with Federal requirements may well block the Federal license. For example, compliance with the State requirement, discussed above, that the water of the Cedar River all be returned to it at the nearest practicable place would reduce the project to the small one which is classified by the Federal Power Commission as "neither desirable nor adequate." Similarly, compliance with the engineering requirements of the State executive council, if additional to or different from the Federal requirements, may well result in duplications of expenditures that would handicap the financial success of the project. Compliance with requirements for a permit that is not to be issued is a procedure so futile that it cannot be imputed to Congress in the absence of an express provision for it. On the other hand, there is ample opportunity for the Federal Power Commission, under the authority expressly given to it by Congress, to require regulation the presentation of evidence satisfactory to it of the petitioner's compliance with any of the requirements for a State permit on the State waters of Iowa that the Commission considers appropriate to effect the purposes of a Federal license on the navigable waters of the United States. This evidence can be required of the petitioner upon the remanding of this application to the Commission (pp. 166–167).

The Court determined that the detailed provisions of the Federal Power Act, providing for the Federal plan of regulation, leave no room or need for conflicting State controls. It is the Federal Power Commission, said the Court, rather than the Iowa Executive Council, that under our constitutional government must

pass upon these issues on behalf of the people of Iowa as well as on behalf of all others (pp. 181–182).

(*c*) *Other congressional powers*

We believe the following quotation from *Ashwander* v. *T. V. A., supra*, is indicative of the basic power of the Federal Government with respect to any superimposition of a Federal program over a State, local, or private program. Said the Court:

"* * * Suppose, for example, that in the erection of a dam for the improvement of navigation, it became necessary to destroy a dam and powerplant which had previously been erected by a private corporation engaged in the generation and distribution of energy which supplied the needs of neighboring communities and business enterprises. Would anyone say that, because the United States had built its own dam and plant in the exercise of its constitutional functions, and had complete ownership and dominion over both, no power could be supplied to the communities and enterprises dependent on it, not because of any unwillingness of the Congress to supply it, or of any overriding governmental need, but because there was no constitutional authority to furnish the supply? * * *"

It is for Congress alone to decide whether a particular project, by itself or as part of a more comprehensive scheme, will have such a beneficial effect on the arteries of commerce as to warrant it. That determination is legislative in character (*Oklahoma ex rel. Phillips, Governor* v. *Guy F. Atkinson Co. et al., supra*, p. 527).

Another article affords a basis for grants for flood-control benefits. This is article I, section 8, clause 1 which states that Congress shall have power to provide for the common defense. Navigation and commerce are important to this subject (see *Ashwander* v. *T. V. A.* (1936) 297 U. S. 288, 328). This latter power has been held to support numerous acts of Congress such as providing for the construction, management, and operation of the Panama Canal (*New York ex rel. Rogers* v. *Graves et al.* (1937) 299 U. S. 401).

Still another constitutional grant of power, in article I, section 8, clause 1, states that Congress shall have power to provide for the general welfare. In view of the statement of the Supreme Court in *U. S.* v. *Gerlach Co.* (1949) 339 U. S. 725, 738) that "* * * the power of Congress to promote the general welfare through large-scale projects for reclamation, irrigation, *or other internal improvement*, is now clear and ample as its power to accomplish the same results indirectly through resort to strained interpretation of the power over navigation * * *" [emphasis supplied] some consideration should be given to this constitutional grant of power to Congress.

Charles Warren has stated, with regard to the meaning of this clause, that two divergent opinions were held at the outset of our constitutional history. The first was that of James Madison who held the view that since Congress, in the clauses following the taxing power clause, was granted authority to perform only specified and limited functions, it could raise money under its taxing power and appropriate that money for the general welfare only to the extent of carrying out those specified and limited functions. The second view was that of Alexander Hamilton who expressed the opinion that while Congress was limited by the Constitution in the governmental functions which it could perform, its express power to tax to provide for the general welfare carried with it an implied power to appropriate the tax moneys for anything Congress considered to be for the general welfare (see Warren, Congress as Santa Claus * * * (1932) p. 6 ff). The issue as to which of these two divergent views was to prevail was not settled until the Supreme Court decisions in *U. S.* v. *Butler* ((1936) 297 U. S. 1), *Steward Machine Co.* v. *Davis* ((1937) 301 U. S. 548), and *Helvering* v. *Davis* ((1937) 301 U. S. 619) finally accepted the view of Hamilton and established the proposition that in the promotion of the general welfare the moneys of the Nation could be used to relieve the unemployed and dependents in economic depressions, and to guard against such depressions. Further, in drawing the line between what is general welfare and what is particular welfare, the determination of the Congress must be respected by the courts unless arbitrary. Nor is the concept of the general welfare static, said the Court. Needs that were narrow or parochial a century ago may be interwoven in our day with the well-being of the Nation (*Helvering* v. *Davis, supra*, pp. 640–641). See also *City of Cleveland v. U. S.* ((1945) 323 U. S. 329) upholding grants of Federal funds and credits to improve housing; *Millard* v. *Roberts*

((1906) 202 U. S. 429) upholding the use of public funds for the elimination of grade crossings; and *Bradfield* v. *Roberts* ((1899) 175 U. S. 291) upholding an appropriation to a sectarian hospital as compensation for the treatment and cure of poor patients.

We are returning herewith the material transmitted by your letter.

FRANK B. HORNE,
American Law Division.

MARCH 24, 1954.

THE LIBRARY OF CONGRESS,
LEGISLATIVE REFERENCE SERVICE,
Washington 25, D. C., February 16, 1955.

To: Hon. Gracie Pfost (attention: Mr. Rapaich).
From: Frank B. Horne.
Subject: Water rights.

Your question, as stated by telephone message, is, Can a farmer's or irrigator's right to the beneficial use of waters (previously granted) be taken away arbitrarily, or must it be done by due process with just compensation? This question, you state, arises in connection with the Hells Canyon bill.

In some circumstances, a question such as this could be answered categorically in the affirmative, because vested water rights, under applicable Federal and Idaho State laws, are more than merely usufructuary in character. They are, in many cases, appurtenant to the land and the accepted view is that they have all the dignity of a freehold. (See Constitution of Idaho, art. 15, sec. 3; Idaho Code (1947), secs. 42–101 to 104; Reclamation Act of June 17, 1902 (32 Stat. 388, 390; U. S. C. 43: 383); sec. 1 of the Flood Control Act of 1944 (58 Stat. 887); subsec. 3 (e) of the Submerged Lands Act of 1953 (67 Stat. 29, 31); and Wiel, Water Rights in the Western States (3d ed., 1911), secs. 18, 283, and 285.) Early Idaho case law recognized and declared vested water rights to have freehold status. (See *Boise City Irrigation and Land Co.* v. *Stewart* ((1904) 10 Idaho 38, 77 Pac. 25, 32, and 321); *Ada County Farmers' Irr. Co.* v. *Farmers' Canal Co.* ((1898), 5 Idaho 793, 51 Pac. 990, 992); *McGinness* v. *Stenfield* ((1898), 6 Idaho 372, 55 Pac. 1020); *Hall* v. *Blackman* ((1902, 8 Idaho 272, 68 Pac. 19); *Taylor* v. *Hulett* ((1908), 15 Idaho 265, 97 Pac. 37, 38); and other cases.) The right is constitutionally protected (*Knowles* v. *New Sweden Irrigation District* ((1908), 16 Idaho 217, 101 Pac. 81, 86)). The fifth amendment to the Constitution of the United States clearly says that no person shall be deprived of property without due process of law; nor shall private property be taken for public use without just compensation. Further, the 14th amendment says that States shall not deprive a person of property without due process.

The answer to the question you have raised is not so easily disposed of, however, when framed with reference to Hells Canyon and the Snake River. The Supreme Court of the United States has held that river to be a navigable stream at the boundary between the States of Oregon and Idaho (*Scott* v. *Lattig* ((1913), 227 U. S. 229)). Further, from an early period, the Supreme Court has held that the power to regulate commerce, under article I, section 8, clause 3, included navigation within the limits of every State (*Gibbons* v. *Ogden* ((1824), 9 Wheat. 1)). This constitutional authority, must, of course, be harmonized with other provisions of the Constitution, which unavoidably deals in general language (*Martin* v. *Hunter* ((1816), 1 Wheat. 304, 326)).

We have not found a satisfactory guide indicating the extent of Federal power to control navigation or exercise other constitutional powers to the detriment of vested water rights on navigable streams. Most decisions appear to avoid the precise issue. (See *Niagara Mohawk Power Corp.* v. *F. P. C.* ((1952), 202 F. 2d 190); *U. S.* v. *Chandler-Dunbar Co.* ((1913), 229 U. S. 53, 69); *Oklahoma ex rel. Phillips, Governor* v. *Guy F. Atkinson Co. et al.* ((1941), 313 U. S. 508).) However, we respectfully suggest that even the admission of the existence of a paramount power does not argue necessarily that it will be improperly used, or used to the detriment of owners of water rights appurtenant to lands.

Mr. BUDGE. There is one other thing I would like to say to you, Mr. Wilson, and that is this: The reason you received a copy of the Library of Congress opinion relative to the water rights if the Hells Canyon Dam were constructed was because your name appears as a member of the Idaho State Bar Association.

Mr. WILSON. That is right.

Mr. BUDGE. Those reports were sent to the lawyers of the State of Idaho, some 600 I believe, and were not sent under congressional frank.

Mr. WILSON. Mine was, sir.

Mr. BUDGE. Well——

Mr. WILSON. I can dig it up. I got it in my grip. You forgot to put the stamp on them. I forgive you for it, but that is the way it came, and I have it in my file.

Mr. BUDGE. Even though they were franked——

Mr. WILSON. I do not know that makes any difference.

Mr. BUDGE. They were sent to every person practicing law in the State of Idaho.

Mr. WILSON. That is right. That is what I thought you had done.

Mr. BUDGE. Let me ask you: Did you ever hear in Idaho or any place else of the Bureau of Reclamation proposing to build a storage reservoir below any possible area to be irrigated with the exception of——

Mr. WILSON. I am not familiar with the others, but this is peculiar and probably the only place in the United States where water would be preserved by storing it down there and save flood conditions below.

Mr. BUDGE. For your information, the reason that this question as to the water rights has arisen in the form that it has, and for the first time, is because in the 50-year history of the Bureau of Reclamation this is the first time that they ever proposed building a dam below all possible irrigation.

Mr. WILSON. Yes, but there is nothing wrong about that if that is the place where the dam should be to hold the waters that go into the sea and are not used. Nothing would be wrong about that, sir.

Mr. BUDGE. I would make this comment to you——

Mr. WILSON. Yes, sir.

Mr. BUDGE. That the very operating plan of the Bureau of Reclamation in the past has been consistent with the laws of the Western States because the reservoir was built upstream from the irrigated acreages, and the Bureau then placed the water out on the land consistent with the State law. Now for the first time in the 53-year history of the Bureau they are proposing to build a structure downstream so that by the operation of the plant it is in fact not by its own operation consistent with State law, which of course presents a different question. Would you not agree to that?

Mr. UDALL. Would the gentleman yield to me?

Mr. BUDGE. Yes.

Mr. WILSON. Don't I get the chance to answer?

Mr. UDALL. Is not the situation here identical with the Glen Canyon Dam in the upper Colorado project?

Mr. BUDGE. No; because——

Mr. UDALL. It is a downstream dam. That dam is below all the irrigation projects in Wyoming, Colorado, and Utah. Does the gentleman say this is a precedent and the Department has never done it? I do not see any difference really in Glen Canyon and Hells Canyon.

Mr. BUDGE. I think the difference would lie in the fact that you have an exchange of water between the upstream area and downstream area, which is not true in this instance.

Mr. Wilson, I want to ask you one more question. Is it true or not that about a year or so ago you were active in attempting to pass an

initiative measure in the State of Idaho, which measure would have, if adopted by the people, taken over not only all of the power utilities in the State but also all of the communication facilities in the State?

Mr. WILSON. No; it would not. It provided law so that the State might do it.

Mr. BUDGE. If it were enacted, it would have taken over all of the utilities in the State.

Mr. WILSON. No; it would not. They had to put it in action by the State. It would not have taken them over just by itself.

Mr. BUDGE. If carried through to its ultimate conclusion——

Mr. WILSON. Like any other law that is put on the statute books, if set up, you go with it, whether that or something else.

Mr. PILLION. Will the gentleman yield?

Mr. BUDGE. Yes.

Mr. PILLION. Was that legislation limited only to power companies? How about all the other manufacturing companies and merchandising and distributing companies? Why not take them all over?

Mr. BUDGE. It included all communication facilities as well as power.

Dr. MILLER. May I ask the witness if he believes that the Government ought to operate all over the country all power facilities and communications.

Mr. WILSON. I was born in Nebraska, sir, and that State is the only State in the Union that has all public power.

Dr. MILLER. And we are constantly short of power.

Mr. WILSON. Sure, but you are down there where there isn't any power. I know about that. I was reared down there. My father went in there after the Civil War.

Dr. MILLER. And industry has been staying out of the State because we have public power.

Mr. WILSON. Pardon me?

Dr. MILLER. Industry has been staying out of the State perhaps because we have public power. At least it looks that way. It is a disgraceful situation. The public-power interests in the State are fighting each other all the time. It is a sorry situation. I am for public power, I am from a public-power State. I do not believe in this instance if you can get someone else to do it, even you would want the Government to take over all public power.

Mr. WILSON. They have in other industries at times and they are doing——

Dr. MILLER. Do you think they ought to pay taxes on the property?

Mr. WILSON. We pay taxes. We pay taxes now. I pay taxes on what power I use and it is charged in as part of the expense right down there——

Dr. MILLER. Suppose the Government took over all businesses, automobile businesses——

Mr. WILSON. Sir?

Dr. MILLER. Suppose the Government took over all businesses, automobile businesses and all, who pays the taxes?

Mr. WILSON. If the time ever comes when people are of that notion they will be doing it, but the time is not here now and Lord only knows if it ever will be.

Mr. PILLION. Will the gentleman yield?

Dr. MILLER. Yes.

Mr. PILLION. Do I understand your recommendation to this committee to be this—that you believe this proposition is a financially sound one and one that will supply cheaper power to the people in Idaho?

Mr. WILSON. That is right.

Mr. PILLION. And you recommend it to this committee to pass this project?

Mr. WILSON. That is right.

Mr. PILLION. If it is such a good project, one that is going to bring about a utopia for the people in Idaho, why does not the State of Idaho take it over and finance it and run it?

Mr. WILSON. Did the State of Washington have to? Did any other State in the United States have to? Did New York State have to do it when they fixed the waterway up at the St. Lawrence the other day? No.

Mr. PILLION. No; but——

Mr. WILSON. Why put us out? We should be on the same category as everybody else according to the Constitution. You cannot mistreat one State as against the other.

Mr. PILLION. But if the benefits are so great and as great as you describe them here to everybody, and the advantages are so fine, then why not limit the advantages to the State of Idaho and let them finance it, let them put in the money and let them reap all the benefits that are to come from this project? Is not that a pretty fair statement?

Mr. WILSON. I think that would not be a fair statement to come from a Congressman who knows his Constitution.

Mr. BUDGE. Mr. Chairman, I would like to get on now with the opponents' time.

Mr. ASPINALL. Thank you very much, Mr. Wilson, for your appearance.

Mr. WILSON. Thank you.

(The resolutions submitted by proponents follow:)

RESOLUTION OF LOCAL 429, FARMER UNION, LEWISTON, IDAHO

Whereas the members of Farmer Union Local 429 believe that the natural resources of the United States must be conserved to the fullest in order that future generations may enjoy the highest standard of living and that the United States may continue to be a bulwark of freedom in the world; and

Whereas the Congress of the United States in line with this policy has recently appropriated funds for the construction of Ice Harbor Dam on the lower Snake River in Washington; and

Whereas approximately one-third of the potential power production of Ice Harbor Dam and the three other dams authorized for construction on the lower Snake would be due to storage provided by a high dam at Hells Canyon; and

Whereas the waters impounded by a high dam at Hells Canyon would insure the financial feasibility of the developments on the lower Snake River, and these storage waters would contribute an amount of power approximately equal to Bonneville Dam when utilized in the power plants of authorized downstream installations; and

Whereas it is necessary for the Bonneville system to control upstream storage if the system is to furnish the maximum of its potential; and

Whereas the Idaho Power Co. now has applications pending before the Federal Power Commission to build three low-head dams in the Hells Canyon area of the Snake River which would forever preclude the possibility of maximum storage of the waters of the Snake River and would mean the loss of one-half million kilo-

watts of power to the people of the Northwest and the Nation, if granted; and

Whereas it seems probable that unless an authorization of the high dam at Hells Canyon is passed at this session of Congress, the application of the Idaho Power Co. will be granted by the FPC: Therefore, be it

Resolved, That Farmer Union Local 429 hereby requests the authorization of a high Government dam at Hells Canyon at the present session of Congress.

HERBERT HOWE, *President.*

RESOLUTION, CRAIGMONT, IDAHO

Resolved by Craigmont Grange 346, That we reaffirm our endorsement of the Hells Canyon Dam and we urge the introduction of authorizing legislation in early 1955, to be followed as soon as possible by appropriations for construction of the Hells Canyon Dam; and be it further

Resolved, That we urge that power shall be marketed from the Hells Canyon Dam in accordance with the Bonneville Act; and be it further

Resolved, That the proposed Hells Canyon Dam enabling legislation clearly spell out the policy that water rights for consumptive purposes in the order of priority of domestic use, irrigation use and industrial use, both for present usage and all future usage, shall at all times have prior right to water over hydroelectric generation; be it further

Resolved, That a copy of this resolution be sent to each of the four Members of Congress from Idaho, and a copy to the Idaho State Grange.

Adopted by Craigmont Grange, No. 346, January 15, 1955.

MELVIN SMITH,
Master.
MRS. EDNA SHEARS,
Secretary.

THE HELLS CANYON CONTROVERSY IN THE IDAHO STATE GRANGE—RESOLUTION BY PLUMMER GRANGE, NO. 273, PLUMMER, IDAHO

Whereas the Idaho State Grange is composed of a general representation of the agricultural people of Idaho; and

Whereas it is the duty of this broad and general representation of the agricultural people of Idaho to set forth, in general principles, their requirements regarding this controversial issue; and

Whereas the action taken by the Idaho State Grange should be of a nature such that our feeling of fraternal brotherhood in our grange should not be jeopardized; and

Whereas the Idaho State Grange, in effect, has been directing a school of thought which has become a partisan political issue and to press this issue further would only lead to additional dissent on the part of members who have the opposite political view; and

Whereas the issue of Hells Canyon is a composite of several issues rather than one, which, in rules of parliamentary law and fairness to reason, should not be grouped as a single issue: Now, therefore, be it

Resolved, That the controversial issue of public power versus private power be omitted from the work this session of the Idaho State Grange; and be it further

Resolved, That the Idaho State Grange go on record as favoring the development of the bountiful natural resources of the State of Idaho to the greatest intensity that is economically feasible, provided that in doing so the water rights of the people on the Snake River watershed be guaranteed an undisputable prior right to all future claims to water flowing or stored in the Snake River or in its tributaries—be the claims from public power or from private power sources.

W. E. STORMS,
Committee Chairman.
WALTER GREW,
GEORGE A. LONG,
WALLACE FLOCH,
Master.
MRS. WILLIAM E. STORMS,
Secretary.

RESOLUTION, NEZ PERCE, IDAHO

In order to acquaint the Idaho Members serving in the House of Representatives and the Senate of the United States Legislature of the stand of each section of the Idaho Grange from the subordinate level regarding a high dam or three low-head dams on the Snake River of Idaho in the Hells Canyon area, we of the Idaho-Lewis County Pomona propose the following resolution:

SNAKE RIVER RECLAMATION

Whereas the Hells Canyon question came before the citizens of Idaho several years ago and much time has been given to study of all conditions; and

Whereas many persons who opposed this dam in the beginning from lack of knowledge or by being high-pressured by utility groups have reversed their opinions; and

Whereas it has become commonly known that the Idaho Power Co. filed on a given amount of lineal feet of river-flow water to turn their dynamos at all dam sites; and

Whereas all the dams and pumping stations serving the irrigated lands of Idaho have been built since the date of the Idaho Power filings in the early 1900's, with Arrowrock on the Boise River being the first dam and being built in 1914; and

Whereas it is on record that the Milliner Dam of south Idaho was forced to open its gates of irrigation water 3 years in a row to turn the Idaho Power dynamos at Swan Falls south of Nampa; and

Whereas region IX of the National Rural Electric Cooperative Association, at their annual meeting held October 28 and 29 at Boise, reaffirmed their stand to authorize legislation in January 1955, to be followed as soon as possible for the construction of Hells Canyon Dam; and

Whereas this REA body called for an investigation of the policy statements of the Department of the Interior which indicate an intent by Interior officials to weaken, through administrative interpretation, the statutes which have safeguarded electric-power resources against private monopoly; and

Whereas this REA is the group that has brought electricity to the isolated rural areas of Idaho and other States where private power refused to build lines: Be it therefore

Resolved, That in order to acquaint the Members of the National Legislature with the views and desires of each small Grange community of Idaho, that each subordinate Grange take action on the Hells Canyon question and send their findings to all four Members of the Idaho legislators in Washington, D. C.; and be it further

Resolved, That a copy of the findings of each subordinate Grange be returned to the State secretary of the Idaho Grange, Ferrin G. Harland, to be tabulated for the knowledge of the Idaho State Grange.

Adopted by the Idaho-Lewis County Pomono Grange, January 3, 1955.

[SEAL]

K. F. OLSON.

RESOLUTION

In order to acquaint the Idaho Members of Congress with the stand of our Grange regarding a high dam or three low-head dams on the Snake River in the Hells Canyon area, and at the request of the Idaho-Lewis County Pomona, No. 22, the Clearwater Grange, No. 299, located at Clearwater, Idaho, proposes the following resolution:

HELLS CANYON DAM VERSUS THREE LOW-HEAD DAMS

Whereas a low-head dam must depend on water rights to safeguard its maximum power development; and

Whereas the Idaho Power Co. has filed on a given amount of lineal feet of river-flow water to turn the dynamos at all their dam sites; and

Whereas irrigation projects of south Idaho have been forced to yield their irrigation water to this prior water right; and

Whereas low-head dams are of no value for flood control; and

Whereas low-head dams are of no value for wildlife, scenic, or recreational uses; and

Whereas low-head dams depend entirely on the natural flow of the river and do not provide storage of water for dry periods: Therefore be it

Resolved, That this Grange stands definitely for the construction of the multipurpose Hells Canyon Dam; and be it further

Resolved, That we want this dam constructed and owned by the Federal Government: *Provided, however*, That in power development the Federal Government share with the States concerned such costs and benefits as may be for the best interests of the people of those States and of the Nation: *And provided further*, That the Federal Government enter into such contracts with private companies, including cooperative companies, for the development, distribution, and sale of electric power as will be to the advantage and for the benefit of the users and of the whole population; and be it further

Resolved, That a copy of this resolution be sent to each of the four Idaho Members of Congress and to our State Secretary, Farrin G. Harland.

Approved by Clearwater Grange, No. 299, Idaho County, Idaho.

[SEAL]

D. H. MULLEN, *Master.*
ROLLA LANNING, *Secretary.*

FERDINAND, IDAHO, *February 2, 1955.*

Hon. GRACIE PFOST,
United States Representative,
Washington, D. C.

DEAR MADAM: The Ferdinand Grange No. 357 in session by a unanimous vote has gone on record favoring the high dam at Hells Canyon and believe this is to the best interest of Idaho and the Nation.

Sincerely yours,

LAWRENCE GOECKNER,
Master.
EDNA JOHNSTON,
Secretary.
GEORGE C. SCHERER,
FRANK H. BIEKER,
FRED ZODROW,
Executive Committee.

CHARITY NUMBER ONE, GRANGE NO. 294,
Grangeville, Idaho, March 19, 1955.

DEAR REPRESENTATIVE PFOST: The Charity Grange, No. 294, has gone on record favoring Hells Canyon Dam.

Fraternally yours,

ELLA MAE CREA, *Secretary.*

VIOLA, IDAHO, *February 10, 1955.*

Hon. GRACIE PFOST,
Washington, D. C.

DEAR MRS. PFOST: The members of Rock Creek Grange, No. 395, of north Idaho, want to let you know they favor the high dam to be built in the Hells Canyon area.

Sincerely,

MRS. WILLIAM E. SYRON, *Secretary.*

RESOLUTION, TENSED, IDAHO

Whereas the Pacific Northwest is today short of electricity, the industries of this district have had to take a cut of public generated power, and were forced to take a supplement of high-priced steam-generated private power;

Whereas the State of Idaho has a tremendous electrical potentiality, and should be developing these sites to produce this needed electricity: Therefore be it

Resolved, That the Tensed Grange No. 293 have gone on record urging you to do all in your power to make Hells Canyon Dam a reality.

Signed by resolution committee.

A. L. ATKINSON,
Chairman.
ELDON W. SHAW,
HARVEY KAENNURZELL,
Committeemen.

RESOLUTION ADOPTED BY THE MINIDOKA-CASSIA COUNTIES FARMERS' UNION AT RUPERT, IDAHO

Whereas the need for low-cost electric power for the development of Idaho is more apparent than ever: Therefore be it

Resolved, That we affirm our position in favor of the building of the high Hells Canyon Dam by the Reclamation Bureau with adequate water-rights protection of course: Be it further

Resolved, That any such bill allocate at least 500,000 kilowatts of power to Idaho.

HARRY BERG,
President.
ALDO S. DULLATIO,
Legislative Secretary.

RESOLUTION, BUHL, IDAHO

Because many Idaho granges have voted a protest against the Federal high dam at Hells Canyon, and also because the testimony offered by the Idaho State Grange master at the Boise hearing, the impression has become general that all granges and grange members are opposed; at the last State grange convention in Twin Falls, the question was presented, but no action was taken.

The membership of Deep Creek Grange No. 179 consists of people directly connected with agriculture, trying to uphold and work for the original principles of the grange—to promote a more equitable distribution of the wealth of our country. There are no known chamber of commerce members or Idaho Power Co. stockholders in our number: Therefore be it

Resolved, That Deep Creek Grange No. 179 go on record as favoring the Federal Hells Canyon high dam; and that a copy of this resolution be sent to each of Idaho's congressional delegation, and to both the House and Senate Interior Subcommittees.

This resolution was adopted by a majority vote in the regular meeting of Deep Creek Grange No. 179 on June 17, 1955.

[SEAL]

GEORGE FARMER, *Master.*
MRS. JOHN MAYER, *Secretary.*

RESOLUTION FROM THE MARIPOSA GRANGE NO. 140, MOUNTAIN HOME, IDAHO

Whereas this Mariposa Grange No. 140, of Mountain Home, Idaho, is in favor of the buiding of Hells Canyon Dam, we hereby go on record as favoring the resolution of the Idaho-Lewis County Pomona on Snake River reclamation.

HENRY LECRONE,
JOE BONECHER,
STEVE WATERS,
Mariposa Grange Resolution Committee.
EDWARD K. MARKHAM,
Master.

[SEAL]

ELVA V. WATERS,
Secretary.

MARCH 10, 1955.

67129—56——14

RESOLUTION

Idaho Grange, from the subordinate level, regarding a high dam or three low-head dams on the Snake River of Idaho in the Hells Canyon area, we of the Idaho-Lewis County Pomona propose the following resolution:

SNAKE RIVER RECLAMATION

Whereas the Hells Canyon question came before the citizens of Idaho several years ago and much time has been given to study of all conditions; and

Whereas many persons who opposed this dam in the beginning from lack of knowledge or by being high pressured by utility groups, have reversed their opinions; and

Whereas it has become commonly known that the Idaho Power Co. filed on a given amount of lineal feet or river-flow water to turn their dynamos at all dam sites; and

Whereas all the dams and pumping stations serving the irrigated lands of Idaho have been built since the date of the Idaho Power filings in the early 1900's with Arrowrock on the Boise River being the first dam and being built in 1914; and

Whereas it is on record that the Milliner Dam of south Idaho was forced to open its gates of irrigation water 3 years ago in a row to turn the Idaho Power dynamos at Swan Falls south of Nampa; and

Whereas region IX of the National Rural Electric Cooperative Association at their annual meeting held October 28–29 at Boise, reaffirmed their stand to authorize legislation in January 1955 to be followed as soon as possible for the construction of Hells Canyon Dam; and

Whereas this REA body called for an investigation of the policy statements of the Department of the Interior which indicate an intent by Interior officials to weaken, through administrative interpretation, the statutes which have safeguarded electric-power resources against private monopoly; and

Whereas this REA is the group that has brought electricity to the isolated rural areas of Idaho and other States where private power refused to build lines: Therefore be it

Resolved, That in order to acquaint the members of the National Legislature with the views and desires of each small grange community of Idaho, that each subordinate grange take action on the Hells Canyon question and send their findings to all four Members of the Idaho delegation in Washington, D. C.; and be it further

Resolved, That a copy of the findings of each subordinate grange be returned to the State secretary of the Idaho Grange, Ferrin G. Harland, to be tabulated for the knowledge of the Idaho State Grange.

Adopted by the Idaho-Lewis County Pomona Grange January 3, 1955.

RESOLUTION NO. 190, NEWPORT, OREG.

Whereas the Central Lincoln People's Utility District has the responsibility of providing electric service to approximately 45,000 people in western Lincoln, Lane, Douglas, and Coos Counties, along the Oregon coast; and

Whereas the power demands of the district's service area during the past 10 years have increased more than tenfold, and the present demands are expected to triple in the next 10 years; and

Whereas the demands for increased power supplies are general throughout the Pacific Northwest; and

Whereas the economic development of the Pacific Northwest will inure to the benefit of the entire Nation; and

Whereas the full potential economic development of the district's service area and the Pacific Northwest is dependent upon a continuing, abundant, low-cost power supply; and

Whereas full development of the hydroelectric power potentials of the Northwest are a requisite for a continuing adequate power supply in the area; and

Whereas a Federal high Hells Canyon Dam on the Snake River between Idaho and Oregon is essential for full development of the power potentials of the Snake and Columbia Rivers: Now, therefore, be it

Resolved by the Central Lincoln People's Utility District, a municipal corporation of the State of Oregon, That the district go on record as favoring the construction by the Federal Government of the Hells Canyon Dam on the Snake River between Idaho and Oregon as proposed by Senate bill 1333; and be it further

Resolved, That the district's position on Senate bill 1333 be made known to the joint Senate and House Interior and Insular Affairs Committee, the congressional delegations of the Pacific Northwest States, and other Members of the 84th Congress, 1st session.

Adopted this 29th day of March 1955.

MILLARD MARTIN, *President.*

Attest:
[SEAL] JOHN GREENBO, *Secretary.*

RESOLUTION, ROSEBURG, OREG.

Whereas Bonneville and Grand Coulee Dams have been highly successful, contributing greatly to the winning of World War II, and have been the direct origin of the industrial expansion of the Pacific Northwest; and

Whereas additional facilities of this type are needed in order to continue this expansion, to provide for Oregon's rapidly increasing population, and further to minimize flood levels on the Columbia River and other streams; and

Whereas the Army engineer's 308 report has already shown that construction of a high dam in Hells Canyon on the Snake River is the key to the maximum development of the Columbia River system, providing the most practical upstream storage and maximum firm power at downstream dams; and

Whereas the State granges of Oregon, Washington, and California are in favor of the United States Government erecting a high dam in Hells Canyon: Therefore be it

Resolved, (1) That we again affirm our previous decisions regarding construction of Hells Canyon Dam. (2) That we strongly denounce the present administration for its failure to oppose the granting of a license by the Federal Power Commission to build three low dams and to promote the construction of the high Hells Canyon Dam by the Federal Government. (3) That a copy of this resolution be sent to:

Kay Meriwether, executive secretary, National Hells Canyon Association, 1135 Southeast Salmon Street, Portland 14, Oreg.; Senator Wayne Morse, Senate Office Building, Washington, D. C.; Senator Richard L. Neuberger, Senate Office Building, Washington, D. C.; Walter Norblad, Member of Congress, House Office Building, Washington, D. C.; Sam Coon, Member of Congress, House Office Building, Washington, D. C.; Edith Green, Member of Congress, House Office Building, Washington, D. C.; Harris Ellsworth, Member of Congress, House Office Building, Washington, D. C.; Gracie Pfost, Member of Congress, House Office Building, Washington, D. C.

Submitted by Riversdale Grange No. 731, Douglas County, Oreg.

NELDA NORRIS, *Master,*
[SEAL] ANNA TROZELLE, *Secretary.*

RESOLUTION

Whereas this grange is, and always has been, in favor of a Federal Hells Canyon Dam: Therefore be it

Resolved by Keating Grange No. 823 met in regular session this 25th day of March, Go on record as favoring Senate bill 1333; also be it

Resolved, That copies of this resolution be sent to our Senators and Congressmen and to Senator James E. Murray, chairman Senate Interior and Insular Affairs Committee, and to Gracie Pfost, of Idaho.

Resolution examined and approved by Keating Grange No. 823, Keating, Oreg.

[SEAL] BOB COLWARD,
Master.
ARLOINE CORNETT,
Secretary.

POWELL BUTTE GRANGE No. 629,
Powell Butte, Oreg.

DEAR MADAM: Powell Butte Grange assembled in regular session April 1, 1955. It was discussed and voted on in favor of S. 1333 and urge immediate action on this legislature.

Very truly yours,

[SEAL]

NICK RACHOR,
Master.
HELEN SIMMONS,
Secretary.

RESOLUTION, JUNCTION CITY, OREG.

Whereas economic future of Oregon and the Pacific Northwest depends on an adequate supply of hydroelectric power;

Whereas Army engineers' reports show that the construction of a high multiple-purpose dam at Hells Canyon on the Snake River is the key to the maximum development of the Columbia River Basin: Therefore be it

Resolved by South Benton Grange No. 756 in session assembled March 25, To go on record as urging the adoption of Senate bill 1333 which authorizes the construction, operation, and maintenance of Hells Canyon Dam on the Snake River; be it further

Resolved, That copies be sent to State grange, National Hells Canyon Dam Association, and Senators and Representatives of Oregon congressional delegation.

[SEAL]

MILES PETERS,
Master.
EVA PETERS,
Secretary.

RESOLUTION, HERMISTON, OREG.

Whereas the necessity for building the high Federal dam in Hells Canyon on the Snake River is very vital at this time; and

Whereas this high dam will provide flood control, storage, and unlimited electric energy for the Northwest; and

Whereas the shortage of electric power now present in the Northwest makes it imperative that this high dam be authorized and started now: Therefore be it

Resolved, That Westland Grange, No. 827, in regular session on this 8th day of April 1955, does urge immediate action on S. 1333, and asks this Congress to pass legislation authorizing the start of his high dam in Hells Canyon; and be it further

Resolved, That a copy of this resolution be sent to our Representatives in Congress, to Senator James E. Murray, Gracie Pfost, and the executive secretary of the Hells Canyon Association.

W. B. SMITH, *Master.*

[SEAL]

LILLIAN M. SMITH, *Secretary.*

APRIL 8, 1955.

ROSEBURG, OREG., *March 31, 1955.*

Whereas Lookingglass Grange, No. 927, of Lookingglass, Oreg., went on record January 12, 1954, in favor of and supporting the Hells Canyon donation fund: Therefore be it

Resolved, That the officers and members of Lookingglass Grange, No. 927, at a recent meeting, went on record favoring S. 1333, the Federal high Hells Canyon measure.

CHARLES E. SCHULTZE, *Master.*

[SEAL]

SUSIE OAR, *Secretary.*

OPHIR GRANGE, No. 767,
Ophir, Oreg., March 25, 1955.

GRACIE PFOST,
Member of Congress,
House Office Building, Washington, D. C.

DEAR MADAM: Ophir Grange, No. 767, went on record endorsing Senate bill No. 1333, at their regular meeting, on the above date.

Very truly yours,

RAYMOND H. STEVENS, *Master.*
[SEAL] RUTH M. MOORE, *Secretary.*

RESOLUTION, MYRTLE POINT, OREG.

Whereas the need for electrical power is increasing rapidly in the Pacific Northwest; and

Whereas we do not believe in the administration's partnership power program of the Government building dams and the private power interests collecting the lion's share of the revenue; and

Whereas we believe a high dam in Hells Canyon will utilize in the fullest the potential of this great site: Therefore be it

Resolved, That the McKinley Grange, No. 582, in regular session on the 26th day of March 1955, unanimously went on record as favoring the enactment of S. 1333 at this session of Congress, so that this great power site may begin contributing prime kilowatts to the Northwest power pool at the earliest possible moment.

ELMER STRODE, *Master.*
[SEAL] PRISCILLA MAST, *Secretary.*

HILLSBORO GRANGE, No. 73,
Hillsboro, Oreg., April 9, 1955.

A RESOLUTION

Whereas Senate bill No. 1333 and a companion bill in the House of Representatives of the United States Congress having been introduced for the construction, maintenance, and operation of a high dam at the Hells Canyon site on Snake River; and

Whereas a high Hells Canyon Dam is part of the intervent development of the Columbia River system for power, irrigation, navigation, recreation, etc.; and

Whereas the Army engineers and Reclamation Service engineer reports state that a high Hells Canyon Dam is both feasible and self-liquidating; and

Whereas the Northwest region is in need of more electric power for home use and the developing of industry; and

Whereas the defense of the United States depends on the power from these great dams in cases of emergency: Therefore be it

Resolved by Hillsboro Grange, No. 73, in regular session, this 9th day of April 1955, go on record as approving the principles embodied in Senate bill No. 1333 and companion bill in the House of Representatives and ask our Senators and Representatives to use their influence in the passage of these bills; and be it further.

Resolved, That copies of this resolution be sent to our Senators and Representatives in Congress, to Representative Hon. Gracie Pfost, of Idaho, the Oregon State Grange, and the Hells Canyon Association.

W. J. VANDEHEY, *Master.*
ERMA L. WHITAKER, *Secretary.*

BEAVERTON, OREG., *March 28, 1955.*

Whereas, in the electrical development of the Pacific Northwest, the Snake River will ultimately be harnessed; and

Whereas it is our considered belief that this will be accomplished most efficiently by the construction of a single high dam by the Federal Government: Now, therefore, be it

Resolved, That Beaverton Grange in regular session assembled this 28th day of March 1955, go on record favoring the high Hells Canyon Dam.

Adopted.

BERT WILSON, *Master*
E. G. PERKINS, *Secretary.*

BANDON, OREG., *April 1, 1955.*

Representative GRACIE PFOST,
House of Representatives,
Washington, D. C.

DEAR MADAM: We of Westmost Grange, No. 884, would like to take this opportunity to thank you for your efforts in order to obtain construction of the vital Hells Canyon Dam.

This grange has unanimously passed a resolution favoring Federal construction of the high dam in Hells Canyon. We want you to know that public support for this project is not lacking.

Sincerely,

[SEAL]

ED B. GOULD,
L. M. KRANICK,
J. J. MORRIS,
Committee.

COQUILLE, OREG., *April 1, 1955.*

To the National Hells Canyon Association:

Whereas the full development of our water resources is highly necessary: Therefore be it

Resolved, That the Coos County Pomona Grange favor the passage of S. 1333.

C. B. HOLLAND, *Master.*
MRS. CARL PETERSON, *Secretary.*

FERNHILL GRANGE No. 592,
Rainier, Oreg.

Whereas the Federal high Hells Canyon Dam will provide more power than the three low-head dams proposed by the Idaho Power Co.; and

Whereas there is a vast need for more power in the Pacific Northwest to promote more industries which will help solve the unemployment situation in the Pacific Northwest; and

Whereas low-cost power is needed to develop the phosphate beds of Idaho to furnish fertilizer which is badly needed by the farmers in this area: Therefore be it

Resolved, That Fernhill Grange, No. 592, Rainier, Oreg., go on record to petition the Insular and Interior Affairs Committee to favor the Federal high dam in Hells Canyon; be it further

Resolved, That copies be sent to the Insular and Interior Affairs Committee, the United States Senators and Representatives of Oregon and to the Oregon State Grange.

Resolution read and adopted by Fern Hill Grange, No. 592, at a regular meeting March 26, 1955.

[SEAL]

W. W. DIMBLE, *Master.*
LUCILLE DIMBLE, *Secretary.*

OSWEGO, GRANGE, No. 175,
Lake Grove, Oreg., March 24, 1955.

Re Hells Canyon Bill No. 1333.

It is hereby resolved that the Oswego Grange, No. 175, wishes to go on record in support of the Hells Canyon Dam bill No. 1333.

[SEAL]

DURWARD E. FRY,
Master.
SABRA F. OLDHAM,
Secretary.
STANLEY OLDHAM,
J. F. HALLMEYER,
JOE DELENT,
Executive Committee.

IRONSIDE, OREG., *March 25, 1955.*

Be it resolved, That El Dorado Grange No. 817, Ironside, Oreg., wishes to go on record as being in favor of S. 1333.

MERLE A. NELSON, *Master.*

[SEAL] ERNESTINE L. HOWARD, *Secretary.*

RESOLUTION, EATONVILLE, WASH.

HELLS CANYON DAM

Whereas we believe in the comprehensive development of all of our river resources: Therefore be it

Resolved by Ohop Grange No. 812 of Pierce County, State of Washington, That we favor the building of the high dam by the Federal Government and urge the passage of Senate bill 1333.

[SEAL] M. KJELSTAD, *Secretary.*

MARYSVILLE, WASH.

Hon. GRACIE PFOST: More power to you.

A. G. ZIEBELL.

Whereas after a careful study of both sides of the question of 1 high dam at Hells Canyon, or 3 low dams on the Snake River as the arguments appeared in the daily press; and

Whereas we have in mind the most benefit to the most people, and after due consideration of both sides of the question we are convinced that it would not be to the best interest of the majority of the people living in the States of Montana, Idaho, Oregon, and Washington to build three low dams on the Snake River: Therefore be it

Resolved by Kellogg Marsh Grange No. 136 in session the 19th day of March 1955, That we instruct and urge our Senators and Representatives in Congress to work for a high dam on the Snake River at Hells Canyon.

[SEAL]

GERTRUDE BRITSCH,
Secretary.
C. A. BRITSCH,
Master.
A. G. ZIEBELL,
R. C. FRANKIE,
Resolution Committee.

KENNEWICK, WASH., *May 16, 1955.*

Representative GRACIE PFOST,
House of Representatives, Washington, D. C.

DEAR MRS. PFOST: In the early part of this year, in the Congress of the United States, the following Senators: Morse, Magnuson, Jackson, Neuberger, Chavez, Gore, Hennings, Kilgore, McNamara, Young, Anderson, Douglas, Hill, Humphrey, Johnston, Kefauver, Langer, Lehman, Murray, Neely, Sparkman, Mansfield, Scott, O'Mahoney, Kerr, Clements, Green, Symington, Fulbright, and McClellan, and four Representatives: Mrs. Gracie Pfost, Mrs. Edith Green, Lee Metcalf, and Don Magnuson, introduced bill 1333 authorizing Federal construction of high Hells Canyon, with Senator James E. Murray of Montana as chairman of the Senate Committee on Interior and Insular Affairs; be it

Resolved, That Benton County Pomona Grange No. 26 this 14th day of May praise the above Senators and Representatives for their part in introducing S. 1333 and wish them success in passage of the bill, and for their farsightedness in seeing the necessary needs for high Hells Canyon Dam as the only way to comprehensive development of the Western States by our Federal Government; be it further

Resolved, a copy of this resolution be mailed to all Members mentioned above, showing that our interests are the same as theirs on comprehensive development.

Adopted by Benton County Pomona Grange No. 26, are meeting in regular session this 14th day of May 1955.

LAUREN TWEEDT, *Master.*
[SEAL] INIS TWEEDT, *Secretary.*

RESOLUTION No. 352, WASHINGTON, D. C.

Whereas legislation has been introduced in the Congress to authorize the construction, operation, and maintenance of a Federal multipurpose dam at Hells Canyon in the Snake River between Idaho and Oregon; and

Whereas the development of this dam site would provide critically needed power and badly needed flood control as well as water for irrigation and recreation in the Pacific Northwest area; and

Whereas the Hells Canyon Dam has become a major controversy between advocates of public power development and private utility interests, and in order to protect the rights of the American citizen in matters affecting conservation and development of natural resources in the best public interests; and

Whereas that every effort should be made to effect the passage of S. 1333 in the present Congress to prevent the last great natural dam site in America from being squandered for the benefit of a monopoly rather than developed for the benefit of all people; therefore be it

Resolved, That this convention of the Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express, and Station Employes, in quadrennial session assembled, go on record in support of this legislation and requests its officers, in cooperation with the American Federation of Labor, to press for its enactment.

UNITED ASSOCIATION OF JOURNEYMEN AND APPRENTICES
OF THE PLUMBING AND PIPE FITTING INDUSTRY
OF THE UNITED STATES AND CANADA,
LOCAL 459,
Missoula, Mont., May 20, 1955.

Hon. GRACIE PFOST,
House Committee on Interior and Insular Affairs,
Capitol Building, Washington, D. C.

DEAR MADAM: Enclosed for your consideration is a copy of a resolution recently adopted by local union 459 of Missoula, Mont.

We sincerely hope you will find it of some assistance in arriving at a decision regarding the proposed legislation which it concerns.

Yours very truly.

L. J. D. MAXSON,
[SEAL] *Recording Secretary.*

RESOLUTION FAVORING FEDERAL CONSTRUCTION OF HELLS CANYON DAM

Whereas the construction of the multipurpose Hells Canyon Dam is of vital importance to the economy of the United States, and especially the Pacific Northwest; and

Whereas the Federal Government is alone capable of constructing and maintaining this huge project; and

Whereas Federal administration of this project will give the American public an equitable opportunity to share the great benefits resulting from the construction of this multipurpose dam; and

Whereas Hon. Wayne L. Morse, senior Senator from Oregon, has deemed it wise and proper to introduce in the United States Senate a bill authorizing the Federal Government to proceed with the construction of Hells Canyon Dam: Now, therefore, be it

Resolved, That this Local Union No. 459 of the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, located at Missoula, Mont., go on record as advocating the immediate enactment of Senate bill 1333, introduced by Senator Wayne L. Morse; and be it further

Resolved, That the recording secretary of this local union submit a copy of this resolution to the Members of Congress and Federal administrators most directly concerned with the enactment of this legislation.

CHARLES BULS, *President.*

CENTRAL TRADES AND LABOR COUNCIL,
Kalispell, Mont., May 4, 1955.

Hon. GRACIE PFOST,
House of Representatives,
Washington, D. C.

DEAR MADAM: I am taking the liberty of enclosing a copy of a resolution that has been unanimously approved by the Central Trades and Labor Council of Kalispell, Mont., and I respectfully request your serious consideration of this resolution.

I believe the resolution is self-explanatory and that the creation of the Hells Canyon Dam will be most helpful now not only to those in the Pacific Northwest but also to all of the people of the United States.

A copy of this resolution has been forwarded to all members of the Senate Committee on Interior and Insular Affairs as well as to all members of the House Committee on Interior and Insular Affairs.

Trusting your committee will give this resolution of ours very serious attention, I am

Sincerely yours,

[SEAL] NOEL M. GIES, *Secretary.*

RESOLUTION FAVORING PUBLIC CONSTRUCTION OF HELLS CANYON DAM

Whereas there has been introduced in the Senate of the United States by Hon. Wayne L. Morse, senior Senator from Oregon, with the cosponsorship of 29 other distinguished Senators, a bill known as S. 1333, to authorize the Federal Government to construct, operate, and maintain a public multipurpose dam, to be known as Hells Canyon Dam, on the Snake River between Idaho and Oregon; and

Whereas the Idaho Power Co. now has pending before the Federal Power Commission a request for authority for private construction of three low-head private electric power dams on the Snake River at or near the site proposed for the public construction of the multipurpose Hells Canyon Dam, and such private construction would practically prevent the construction of the Hells Canyon Dam; and

Whereas public construction of the multipurpose Hells Canyon Dam promises immense and widespread benefits for industry, agriculture, and individuals in the Pacific Northwest, and the enrichment of our entire Nation, by providing a large supply of low-cost electric power, by aiding flood control, irrigation, soil conservation, and river transportation, and by furnishing new recreational facilities; and

Whereas the Federal Government, through its appropriate administrative agency, the Department of the Interior, is alone capable of developing the greatest remaining multiple-dam site in the country for the realization of all the beneficial purposes that are envisioned; and

Whereas in contrast, the private construction of three smaller dams by the Idaho Power Co. at Hells Canyon would virtually deprive the American people of the vast benefits to be derived from the public construction of multipurpose Hells Canyon Dam, and would mean immediate gain for one private power company at the sacrifice of opportunities for the future growth and development of private enterprise on a much broader scale: Now therefore, be it

Resolved, That the Central Trades and Labor Council of Kalispell, Mont., go on record as favoring the immediate enactment of Senate bill 1333 for the public construction of Hells Canyon Dam, as essential for the full development of the rich natural resources of the Snake River Valley, which without such construction would be impossible, and as a public undertaking that properly belongs to all American citizens acting in concert through their Federal Government; and be it further

Resolved, That the Central Trades and Labor Council of Kalispell, Mont., is firmly and basically opposed to any grant of authority to the Idaho Power Co., or other privately owned utility, to construct electric power dams at or near Hells Canyon on the Snake River; and be it further

Resolved, That a copy of this resolution be sent to the Honorable James E. Murray, senior Senator from Montana, and chairman of the Senate Committee on Interior and Insular Affairs, to the Secretary of the Interior, Hon. Douglas McKay, and to the Federal Power Commisison, in order that they may be advised of the position taken by this Central Trades and Labor Council of Kalispell, Mont.

GEORGE H. GOHN, *Chairman.*

Attest:
[SEAL]

NOEL M. GIES, *Secretary.*

HOD CARRIERS, CONSTRUCTION, BUILDING & MAINTENANCE LABORERS,
LOCAL NO. 810,
Twin Falls, Idaho, March 1, 1955.

Congresswoman GRACIE PFOST,
Washington, D. C.

DEAR MADAM: In regard to your bill on the prior water rights on the Snake River, giving prior rights on irrigation and domestic uses over the power interest for generating electricity.

We, the members of laborers' local No. 810, are in full accord with prior rights for irrigation and domestic users of water of the Snake River.

Please send us a copy of this bill on water rights. Thanking you and your coworkers for the good work that is being done in regard to water rights and resources, I remain,

Sincerely submitted.

SIG A. SANDVIK, *Business Representative.*

UNITED ASSOCIATION OF JOURNEYMEN AND APPRENTICES
OF THE PLUMBING AND PIPE FITTING INDUSTRY
OF THE UNITED STATES AND CANADA,
LOCAL UNION 44,
Spokane, Wash., May 26, 1955.

Hon. GRACIE PFOST,
Washington, D. C.

DEAR MADAM: I respectfully request serious consideration for the enclosed resolution in regard the Hells Canyon Dam, S. 1333.

Yours truly,

BURTON P. TAYLOR, *Business Manager.*

RESOLUTION FAVORING PUBLIC CONSTRUCTION OF HELLS CANYON DAM

Whereas there has been introduced in the Senate of the United States by the Honorable Wayne L. Morse, senior Senator from Oregon, with the cosponsorship of 29 other distinguished Senators, a bill known as S. 1333 to authorize the Federal Government to construct, operate, and maintain a public multi-

purpose dam, to be known as Hells Canyon Dam, on the Snake River between Idaho and Oregon; and

Whereas the Idaho Power Co. now has pending before the Federal Power Commission a request for authority for private construction of three low-head electric power dams on the Snake River at or near the site proposed for the public construction of the multipurpose dam, Hells Canyon, and such private construction would practically prevent the construction of the Hells Canyon Dam; and

Whereas public construction of the multipurpose Hells Canyon Dam promises immense and widespread benefits for industry, agriculture, and individuals in the Pacific Northwest, and the enrichment of our entire Nation by providing a large supply of low-cost electric power by aiding flood control, irrigation, soil conservation, and river transportation, and by furnishing new recreational facilities; and

Whereas the Federal Government, through its appropriate administrative agency, the Depatment of the Interior, is alone capable of developing the greatest remaining multiple-purpose dam site in the country for the realization of all beneficial purposes that are envisioned; and

Whereas in contrast, the private construction of three smaller dams by the Idaho Power Co. at Hells Canyon would virtually deprive the American people of the vast benefits to be derived from the public construction of the multipurpose Hells Canyon Dam, and would mean immediate gain for one private power company at the sacrifice of opportunities for the future growth and development of private enterprise on a much larger scale: Now, therefore, be it

Resolved, That local 44 of the United Association of Journeymen and Apprentices of the Plumbing & Steamfitting Industry of the United States and Canada go on record as favoring the immediate enactment of Senate bill 1333 for public construction of Hells Canyon Dam as essential for the full development of the rich natural resources of the Snake River Valley, which without such construction would be impossible, and as a public undertaking that properly belongs to all American citizens acting in concert through their Federal Government; and be it further

Resolved, That the united association is firmly and basically opposed to any grant of authority to the Idaho Power Co., other privately owned utility, to construct electric power dams at or near Hells Canyon on the Snake River; and be it further

Resolved, That a copy of this resolution be sent to the Honorable James E. Murray, senior Senator from Montana and chairman of the Senate Committee on Interior and Insular Affairs, to the Secretary of the Interior, the Honorable Douglas McKay, and to the Federal Power Commission in order that they may be advised of the position taken by this local of the United Association of Journeymen and Apprentices of the Plumbing & Pipe Fitting Industry of the United States and Canada.

BURTON P. TAYLOR, *Business Manager.*

UNITED BROTHERHOOD SHIPWRIGHTS, SHIP JOINERS AND BOAT BUILDERS,
LOCAL UNION 1184,
Seattle 1, Wash., April 19, 1955.

Hon. GRACIE PFOST,
House of Representatives,
Washington, D. C.

DEAR MADAM: Shipwrights, Joiners & Boatbuilders, local 1184, United Brotherhood of Carpenters & Joiners of America, at their regular meeting on April 15, 1955, unanimously went on record in support of H. R. 4719, providing for a Federally-built dam at Hells Canyon.

Our membership is fully aware of the necessity of this project, in order that the fullest possible use can be made of the natural resources of the Northwest.

Respectfully,

JOHN B. WIGEN,
Business Representative.

MISSOURI STATE RURAL ELECTRIFICATION ASSOCIATION,
Jefferson City, Mo., May 23, 1955.

Hon. JAMES E. MURRAY,
Chairman, Senate Interior and Insular Affairs Committee,
Senate Office Building, Washington, D. C.

DEAR SENATOR MURRAY: On behalf of my board of directors, which represents 47 REA-financed cooperatives, serving approximately 230,000 rural consumers in Missouri, may I take this opportunity to let you and all members of your committee know that our association fully endorses Federal authorization of the Hells Canyon project. Moreover, that our association is strongly opposed to the Idaho Power Co. being granted a license to construct even one dam on the Hells Canyon project.

In our opinion, the decision handed down on May 6 by the Federal Power Commission examiner, Mr. Costello, makes it clear that the Federal high dam is the best plan, the best investment, and the best use of resources. To grant a license to the Idaho Power Co. to build one dam, such as Brownlee, which in effect would forever preclude the development of the Hells Canyon project, would, in our way of thinking, bear every earmark of subterfuge.

In the interest of developing and preserving the natural resources of this great Nation for all the people, we urge you and the members of your committee to support S. 1333 and then vote for Federal authorization of Hells Canyon project, including full development of the upper waters of the Snake River, when the bill reaches the Senate floor for action.

Very truly yours,

JULIUS HELM, *Executive Manager.*

RESOLUTION NO. 7, HELLS CANYON DAM—19TH BIENNIAL CONGRESS, COOPERATIVE LEAGUE OF THE UNITED STATES OF AMERICA, CHICAGO, ILL., OCTOBER 25–27, 1954

Whereas efficient use of the water resources of the Nation requires multipurpose dams beyond the capacity of either cooperative or profit-type utilities to construct and operate in a wise and comprehensive manner; and

Whereas the construction of the proposed Federal dam at Hells Canyon on the Snake River, a part of which forms boundary between Idaho and Oregon, will make available a source of low-cost electric power; and

Whereas there exists vast phosphate-rock deposit within the regions adjacent to the proposed Hells Canyon hydroelectric project which could be most economically developed only with low-cost electric power; and

Whereas such phosphate-rock deposits could be manufactured into phosphate fertilizer to the benefit of the general public in the production of more abundant and nutritious food supply; and

Whereas such development would be self-liquidating: Now, therefore, be it

Resolved, That this Congress of the Cooperative League of the United States of America directs its staff to continue their efforts with the Congress of the United States, the Federal Power Commission, and, if necessary, in the courts, in support of the Hells Canyon Dam project and in opposition to alternate proposals for construction of smaller dams.

UNITED ASSOCIATION OF JOURNEYMEN AND APPRENTICES
OF THE PLUMBING AND PIPE FITTING INDUSTRY
OF THE UNITED STATES AND CANADA,
LOCAL UNION NO. 648,
Pocatello, Idaho, June 23, 1955.

GRACIE PFOST,
Member of Congress,
House of Representatives,
Washington, D. C.

DEAR MADAM: The members of the Plumbers' and Steamfitters' Local Union No. 648 wish to acknowledge your fine letter of May 16, 1955.

It seems almost impossible to assemble words to let you know how we and the entire Pocatello labor movement feel.

We have known all along the splendid fight you have put up in support of the high dam, and for the good of all mankind instead of a favored few.

You may feel free to call on us at any time for any further assistance we might be able to give to you. May we take this opportunity to thank you for your splendid work.

With best wishes, I am,

Yours truly,

[SEAL] W. C. MANSELL, *Secretary.*

RESOLUTION FAVORING PUBLIC CONSTRUCTION OF HELLS CANYON DAM

Whereas there has been a bill introduced into the Senate of the United States, by the Honorable Wayne L. Morris, senior Senator from Oregon, and cosponsored by others, known as S. 1333, to authorize the Federal Government to construct, operate, and maintain a public multipurpose dam, to be known as Hells Canyon Dam, on the Snake River between Idaho and Oregon; and

Whereas the Idaho Power Co. has applied for permission to build three low-head dams on this site, for their own exclusive use, thus spoiling the only good site for a high-head multipurpose dam in this area; and

Whereas there are numerous sites suitable for low-head dams along the Snake River; and

Whereas the economic dvelopment of the Northwest has been due primarily to the Federal dam projects; and

Whereas Grand Coulee and Bonneville projects, among others, have proven their worth toward the development of the Northwest; and

Whereas it would create a mighty expansion of irrigation, with water for thousands of now arid acres; and

Whereas it would also create a wonderful new playground for hunters, fishermen, and all outdoor lovers; and

Whereas the State of Idaho, in particular, stands to gain untold revenue from such a project, due to the fact our State's primary resources are rich in phosphate deposits; and

Whereas it has been proven that large quantities of cheap electricity is needed for processing and refining these ores; and

Whereas the Bureau of Reclamation has made an extensive study of the benefits of the multipurpose high dam, and recommends its construction; and

Whereas the controversy over the dam site has gone on over a long period of time, while the resources of Idaho and Oregon go undeveloped, waiting for adequate power: Therefore be it

Resolved, that Local Union No. 648 of the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, go on record as favoring the enactment of S. 1333 without delay, and construction of the multipurpose high dam be completed as soon as possible; the Idaho Power Co. to be given permission to build low-head dams for power generation elsewhere along the Snake, Salmon, Clearwater, or other rivers to meet their increasing demands.

FRANCIS R. SHERMAN,
President.

W. C. MANSELL,
Secretary.

ONTARIO, OREG.

Ontario Heights Grange No. 917, at a special meeting on March 25, 1955, held for consideration of the high Government dam as an integrated part of the Columbia and Snake River resource development versus the low-head dams as proposed by Idaho Power Co., voted unanimously to have the high dam built by the Government as an integrated unit in the Columbia Basin development.

It is emphasized that:

A. The high dam is a necessity for full development of this section of the basin to promote and insure continued expansion of our agricultural resources to provide power at rates that will attract industries with the resultant employment and taxable properties that the area does not now have in sufficient quanity, especially in the area adjacent to Hells Canyon.

B. The aid in equalization and firm up of power at downstream powerhouses is imperative; without this storage for firm up a loss of potential power and its benefits will occur at downstream points as long as they exist.

C. The development of the phosphate beds of southern Idaho are necessary if our farms of the area are to maintain their fertility and ability to produce the maximums. Existing transportation cost alone deny many of the farms of the great Northwest the benefits of phosphate application. The extension of the Bonneville grid system into this upstream area will insure phosphate development as well as attract payrolls and industrial development needed to stabilize many parts of our local economy.

D. Flood control, benefits of power revenues to help equalize high cost irrigation development, recreation with its vast potential for sportsmen, vacationists, etc., alone justify building of the high dam.

A God-given resource, a great river, its tremendous horsepower flowing incessantly, a canyon, one of the deepest in the world, a combination unequaled and unsurpassed; surely it is our duty and trust to preserve this for our sons and daughters and their future generations.

We urge immediate action favoring the Federal high Hells Canyon measure, S. 1333.

ONTARIO HEIGHTS GRANGE NO. 917,
GEO. L. WHITE, *Master.*
WYOMA ROGERS, *Secretary.*

(COMMITTEE NOTE.—Pursuant to permission granted on page 267, the following statements in support of the legislation appear at this point in the record:)

STATEMENT OF C. E. HUFF, MANAGER OF NATIONAL FARMERS UNION RESOURCES CORP., IN SUPPORT OF H. R. 4719, H. R. 4730, H. R. 4739, AND H. R. 4740

Mr. Chairman and members of the committee, as manager of the National Farmers Union Resources Corp., I am here to present the views of our organization in regard to the authorization of the so-called high dam at the Hells Canyon site. Although the facts concerning this proposed dam and site are well known, I think that a brief overall statement in regard to the multiple-purpose potentials of the Snake River might well bear repeating.

The Hells Canyon site is the greatest remaining undeveloped natural site in the world. The plan calls for a dam which will be the third largest dam in the world, only exceeded by Grand Coulee in western Washington and Shasta in California. This great structure will impound 3,800,000 acre-feet of Snake River water which has an annual runoff of 12 million feet. It will consist of 5,100,000 cubic yards of concrete and steel and will not only produce directly and indirectly 1,124,000 kilowatts of firm power but will make possible additional irrigation of millions of acres, improve navigation and control floods.

In our view, as I will later show, of paramount importance is the development of the phosphate beds in the area, but equally as important as this development is the production of the great block of power which the Northwest so sorely needs. We feel that the merits of the Hells Canyon project lies in its great multiple-purpose features. Hells Canyon, as planned by the engineers, will be a part of a vast comprehensive multiple-purpose plan. It was selected by the United States Corps of Engineers as 1 of the 5 great major storage projects in a combination of 34 projects, constituting the main-control plan for the Columbia River Basin.

This comprehensive plan calls for—

(1) A total of 27 million acre-feet of reservoir storage which will make possible the development of nearly 12 million kilowatts of hydroelectric power estimated to be required in the regions between 1960 and 1970.

(2) Adequate transmission facilities to operate all power plants as a single system and to deliver energy to load centers.

(3) Irrigation of approximately 4 million additional acres to increase the total irrigated area in the basin to more than 8 million acres.

(4) Extension of slack-water barge navigation to Lime Point, 30 miles above Lewistown, on Snake River, and to Wenatchee on the Columbia and for water transportation of oil into the region and limestone, copper, lead, and zinc as a return cargo.

(5) The lower Columbia River plan, developed by the United States Fish and Wildlife Service in conjunction with the corresponding State agencies to expand and improve the spawning area of the lower river tributaries and to provide satisfactory provisions at the migration point.

It should be emphasized that no one dam or series of dams can end floods in the Columbia River Basin. Floods can only be prevented as in the Tennessee

Valley by a basinwide group of dams operating in harmony for the purpose of controlling floods. Hells Canyon Dam is the key dam in the main-control plan and absolutely essential if floods are to be controlled and if much-needed hydroelectric power is to be generated.

The basic question confronting this committee and this Congress and this administration is whether the rivers of the Pacific Northwest shall continue to be developed under the direction of the Federal Government for the public benefit under a comprehensive program which makes the fullest use of the running water. In our view, it is the Federal Government's right and moral responsibility to build multiple-purpose dams according to a comprehensive engineering plan for the benefit of not only the people of the great Northwest but for the benefit of all the people in the United States.

There is no alternative to a comprehensive engineering plan if the people are to benefit from their resources in the Northwest. If this committee and the Congress does not do the job, no one else will. If these great resources are handed over to private power groups, the chance for this development will be lost forever. Permitting the Idaho Power Co. to construct just 1 of the projects in its 3-dam scheme would block forever the building of the high Hells Canyon project.

Summarizing statistically, the benefits resulting from the high dam and for the Idaho Power Co.'s 3-dam plan, the high dam would produce 688,000 kilowatts at the site, 436,000 kilowatts at other sites, making a total of 1,124,000 kilowatts of firm power. The 3 little dams would only produce 688,000 kilowatts. The cost of producing high-dam power would be $19.38 per year per kilowatt. The cost of producing power at the 3 dam site would be $36.70 per year per kilowatt, or nearly twice as much. The price at which high-dam firm power could be sold wholesale to buyers would be $21 per kilowatt a year, or 3½ mills per kilowatt. The price at which the 3-dam power could be sold would be $38 per kilowatt per year, or 6 mills per kilowatt. Finally, the high dam would impound 3,800,000 acre-feet of usable water, while the 3-dam plan would impound only 1 million acre-feet of water.

It appears from this brief summary that the evidence is overwhelming in favor of building the high dam. The only remaining argument, it seems to us, is that building the Federal installation would result in a loss of taxes to the Federal Government. The Idaho Power Co. estimates that it would pay $9,780,868 per year additional taxes if its 3-dam scheme is approved and the dams actually built. There is the possibility that the Idaho Power Co. is interested mainly in blocking the high Hells Canyon and not in building the dams it proposes to build.

Let us look at the comparable benefits from a tax-revenue standpoint. People in Idaho and the surrounding areas, if the 3-dam scheme goes through, will pay $38 per kilowatt-year for power instead of $21. They will lose 571,000 kilowatt power, capable of supporting more than 50,000 population with related investment and regional growth. They will lose the opportunity to develop by the electric-process method the phosphate deposits in the area which constitute 60 percent of the reserves in the Nation. They will lose irrigation benefits, with attendant farmstead development, new business, increased property value, and taxes which would come as a matter of course with other developments.

In other words, the Idaho Power Co. is asking the people to forego some $24 million in power-cost saving, $180 million in wages, $525 million in industrial production, and $30 million in Federal taxes in order to collect the $9,760,809 the company says it would pay under a 3-dam scheme in taxes. Also, additional State and local taxes would be lost from the new industries and activities if Hells Canyon high dam is not built.

Significantly, other areas where Federal projects are built have increased their contributions absolutely and proportionately to the Federal Treasury. For example, before the Tennessee Valley Authority was established, the 7 Valley States paid 3.4 percent of total national income taxes. In 1952 it paid 6.2 percent of Federal income taxes. This amounted to a 2.8-percent increase in the proportion which the Valley States had finally paid. This 2.8 percent equaled $900 million in increased tax collection from the valley in 1952 alone.

Of paramount importance are the irrigation benefits which will ensue if the high dam is built. Distribution of low-cost power in arid areas will make possible the additional irrigation of millions of acres which under the 3-dam scheme would be economically unfeasible. A great deal of concern has been expressed in regard to the right of people of Idaho to irrigate with Snake River water. Hells Canyon Dam will not touch a drop of water needed for irrigation in Idaho and will provide cheap power which will assure irrigation.

Today Idaho power rates are comparably higher than those in Washington and Oregon. For example, a typical pumping operation, involving irrigation of 100 acres with an average of 3½ acre-feet of water, lifted 100 feet would cost $709.40 in areas served in the Columbia River Basin. An Idaho farmer would have to pay the power company $865.10 or $155.70 more for the same service.

Many unfamiliar with the problems of agricultural production have been amazed at the miracle of American agriculture. Year after year, farmers have increased their production. They have produced an abundance of food and fiber not only for people in the United States but those in other lands. They have accomplished this miracle despite the fact that the number of workers on American farms has sharply declined, particularly, during war years and despite the fact that the population of the country has been increasing during this generation at an unprecedented rate. It is estimated that by 1975 the population will have increased to 190 million and that 40 percent more food will be needed for an adequate diet.

One of the explanations of the phenomena of American agricultural production has been the increasing amounts of fertilizer used on American farms. Taking 1 of the 3 main elements as an example, phosphate fertilizer use has increased in the country as a whole from 8,429,437 tons in 1931 to 16,537,745 tons in 1951. It is instructive to analyze the consumption of fertilizer by regions during this period. In the Middle Atlantic States which are near the Tennessee Valley and the Florida phosphate beds, consumption declined a little. In the South, it almost doubled. In the East-North Central States, it more than doubled and in the New England States increased somewhat, but in the Mountain, Pacific, and North Central States consumption increased greatly. In the Mountain and Pacific States, it increased almost 4 times and in the North Central States from zero to 637,000 tons.

Location and number of fertilizer phosphate processing plants is significant. According to a survey by the United States Department of Agriculture in 1951, there were 202 phosphate plants in the United States at that time. The South Atlantic and East-North Central regions were the only areas in which every State had facilities for manufacturing normal superphosphate. Of the 16 States that had no facilities, 10 are west of the Mississippi and 6 are east. Breaking down the 202 total, the South Atlantic States have 71 plants, the East Central States have 45 plants, the West-North Central States have 11 plants, while the Pacific States have only 3 plants and the Mountain States only 2. The explanation of this uneven location of plants lies in the fact that phosphate beds which are being used are located in Florida and that the Tennessee Valley is the only area in which phosphate may be processed on a large scale by the electric furnace method.

Charles B. Kellogg, Chief of the Soil Department of the United States Department of Agriculture says that it is absolutely essential that farmers greatly increase their use of phosphate fertilizer. "Unless," Kellogg says, "we can increase substantially phosphate use on farms, many soils will suffer erosion and other serious deterioration because of poor plant vigor if cropping is continued on them. Also other farm practices give poor returns on phosphorus-poor soil. Among these practices irrigation is an excellent example, since it is so expensive. Unless the farmer gets high yields under irrigation he is bound to fail."

Kellogg also points out that phosphates supply in the soil has an important relationship to crop quality. Hay deficient in prosphate comes from soil deficient in phosphate and makes poor animals. Kellogg says in this connection: "* * * It is imperative to our continuing agriculture that we develop the western phosphate deposits, especially by producing from them high-analysis soluble phosphates of low freight cost per ton of P_2O_5 in order to serve a broad area of the country from about eastern Ohio west and southwest to the Pacific Ocean. Otherwise, phosphatic fertilizers for farmers in these great areas will be too high in price for the wide use we need or else too short in supply to meet the full requirement for maintained production."

The chief obstacle in the development of the phosphate beds in Idaho and adjacent States has been the shortage of sulfuric acid and the lack of cheap electric power. According to Roscoe Bel, a former regional administrator of the Bureau of Land Management of the Department of Interior, "It is economically unfeasible to develop low-grade phosphate ore without cheap power * * * the electric furnace method makes possible the utilization of low-grade ores which could not otherwise be used. This use of low-grade ores in effect multiplies our available resource by four, decreases the cost of mining, and thereby reinforces the economy of the industry. Revenues to the local govern-

ment are also increased because 37½ percent of the royalty paid to the Department of the Interior by the lessees are returned to the States."

Competent engineers tell us that the sulfuric-acid method would make possible production of only 48 percent phosphate materials but that the electric-furnace method would make available highly concentrated 65 to 67 percent phosphate material which would cut cost about $6 per ton. The cheap power produced at the high Hells Canyon Dam is the only possible source of cheap power on the horizon. Use of this cheap power would make possible processing of most of the low-grade phosphate material. The sulfuric-acid method can reach about one-tenth of the deposits which have a range of 30 to 34 percent of phosphate concentration. The electric-furnace method will handle five times as much of the ore.

Individuals interested in phosphate production have approached the Utah Power Co. and have been told that power for this purpose will cost 7 mills. If Hells Canyon power can be sold for 3½ mills, it is seen what a saving use of Hells Canyon power would make possible. Furthermore, engineers say that it is not economically feasible, if the cost runs, say, over 4 mills. It would appear from the foregoing facts that the high dam is the only solution to the problem of processing western phosphate rock. Farmers have experienced a phosphate shortage for years, and the need is great. One group distributing phosphate fertilizer estimates that it could have sold 150,000 additional tons a year in the past, in its market area, if phosphate had been available.

A new development by the Tennessee Valley Authority holds great promise for the midwestern farmers if the Hells Canyon Dam is built and if cheap power is available for processing the western deposits. The Tennessee Valley announced that on April 8, this year, that it had begun to produce in a demonstration plant a new high-analysis fertilizer, diammonium phosphate (21–53–0) which contains the highest concentration of plant food (74 percent) of any solid fertilizer produced in quantity at the Muscle Shoals plant. According to TVA, "One ton of this material contains almost as much plant nutrient as 3 tons of mixed fertilizer of the average analysis now used by farmers in the United States. Because of its high concentration, diammonium phosphate offers an opportunity for lowering the costs of plant food to farmers, one of the original objectives of Congress expressed in the TVA Act. A given quantity of this plant food can be packed in fewer bags, transported and handled at less cost, and spread on the land with less effort. These economies can result in savings for farmers, particularly in parts of the country that are distant from basic fertilizer raw materials."

This new discovery together with old techniques of processing phosphate rock by the electric-furnace method may indeed give new sources of food and fiber production needed in generations to come. Although agricultural production has steadily risen for many years, it will reach a point in the near future where production cannot be increased substantially except by use of fertilizer. Phosphate processing of western deposits, building of plants in the area and in areas adjacent to where the material is to be used will solve to a great extent the freight-rate problem which has been one of the bottlenecks preventing phosphate development and use. Freight rates, on the average, account for about 40 percent of the value of phosphate. The new TVA discovery in combination with the electric-furnace method will eliminate most of the weight from phosphate material and make it economically feasible to ship it to all parts of the country.

Finally, a word should be said in regard to the relationship of the Hells Canyon issue to power programs and projects in all areas of the United States. The private power companies are on the march. They are spending millions of dollars in an attempt to mislead and confuse the American people. They are attempting to wreck existing public-power programs. They seem to be successful in getting the ear of this administration. The people cannot be heard at 1600 Pennsylvania Avenue or at any of the executive agencies, which are responsible for administering public power and rural electric cooperative programs. Only the Congress can bring about a change in this deplorable situation. If the Congress authorizes the Hells Canyon project, it will serve as a notice to the administration and the private power companies that the people do not intend to stand idly by while their resources are given away. Hells Canyon has become a symbol in the fight of the people to prevent predatory corporations from taking over their resources for their own private exploitations. Approval of the Hells Canyon would do much to check the giveaway program.

67129—56——15

STATEMENT OF FRANK N. CALVIN, MANAGER, FERTILIZER DEPARTMENT, FARMERS UNION CENTRAL EXCHANGE, INC., SOUTH ST. PAUL, MINN.

Mr. Chairman and members of the committee, my name is Frank N. Calvin. I am representing the Farmers Union Central Exchange, Inc., of South St. Paul, Minn., an organization which is owned by 750 local cooperative organizations located in the States of Wisconsin, Minnesota, North and South Dakota, Montana, and parts of Idaho and Wyoming. There are more than 250,000 farmer-owners of these organizations.

It is the duty of our central exchange organization to procure for and supply to the many local cooperatives petroleum products, automotive and tractor supplies, feed, seed, fertilizers, agricultural chemicals, necessary farm hardware and paints, farm machinery, electrical equipment, and various other farm needs. The farmer-owners in turn procure their supplies from these local cooperatives.

It is expected that our organization procure these supplies of highest quality on the best terms possible. It becomes necessary under these conditions to actually process some of these materials, and in some cases our procurement must become basic and requires that we own and operate oil wells and mines from which we obtain the basic raw materials which we have to process. We now own oil wells and have interest in phosphate deposits and mines.

Fertilizer is one of these products. We believe there is no question in the minds of anyone that fertilizer for our farmers is a most necessary requirement, first, to insure the production of the required volume of food and fiber, second, to assure the quality of these materials, and third, to make them available economically.

The population of our country is increasing very rapidly. We all know that a population of close to 200 million people is expected within 20 or 25 years. The land suitable for producing food and fiber products is now being used. The products being taken from this land are rapidly depleting its fertility and its ability to produce. The land must be protected and built up to maximum productive capacity to insure life for our people. Therefore the productive capacity of any particular piece of land is not only the responsibility of the individual owning and working that land, but of all the population of the country whose existence is dependent on products from the land.

The Northwest area we cover is the breadbasket of the country. The products from this area both in quality and volume go far in guaranteeing the existence of the whole country. The maintenance of the productive capacity of the area becomes a problem of all the population of the country.

The natural resources of the country must be reserved and used for all the people and not subject to a toll of exploitation for the particular advantage of a few of the people.

Since fertilizer is so important, it is well to examine its supply and the procurement of that supply.

Phosphorus is a basic requirement of all food and fiber. There would be no production without it. Because of its chemical characteristics and its affinity for other minerals which make it unavailable as plant food when united with them, it is often the controlling factor in plant growth. Usually the first signs of decreased production can be traced to a lack of plant available phosphorus. History shows that where land productive capacity has decreased perceptibly over a period of time, the addition of phosphorus to that land has turned the trend from a decreasing production to an increasing production immediately. Of course, it is found that additions of other materials later become necessary to replace depletions but phosphorus usually comes first. Its supply becomes a problem of all people.

In this country there are now two main sources of supply of phosphorous, Florida and the western area in Idaho, Montana, and parts of Wyoming. There are differences in the types of material in the two areas and they require somewhat different handling. The western material usually is found in lower concentrations of elemental phosphorus. To prevent waste of precious phosphorus, this western supply requires different procurement techniques. Because of high transportation costs, the western material should supply the needs of the western area. It can do this if our other western resources of cheap waterpower can be retained for all the people as an implement for procuring phosphorus, another necessary requirement of all the people.

We already have proof of the economy and efficiency of electrical power production when the natural resources of an area are developed for the benefit of the area in the Bonneville power system. The population of a whole area is able to have industry and work because of this power. The supply of this cheap

power will be the determining factor in the development of an area which has vast resources dependent on cheap power for development.

We might then ask of what use will the development of vast mineral resources for useful physical enjoyment for the whole country be if there is not enough food to live because of a lack of phosphorus.

The only logical answer for all the people is a combining of the usefulness of the two for the benefit of everyone.

Cheap power is the determining factor in producing cheap and plentiful phosphorus in the western area.

Engineering figures which we have indicate that from power cost alone the reduction of 1 mill per kilowatt-hour reduces the cost of producing elemental phosphorus 0.65 cent per cound. This will mean a reduction in cost of a 65-percent phosphate fertilizer of $4.10 a ton. From this alone we can vision immense savings on the cost of phosphorus when power is provided from a public system such as Bonneville as compared to the cost of power as quoted from other sources. The savings on a 65-percent phosphate fertilizer on this comparison would amount to $9 or more a ton.

From the standpoint of the national welfare, there are still greater savings that can be accomplished through the use of electric power. The western rock being generally of a phosphate concentration lower than can be processed by other methods such as the acid process, the electric power through electric furnaces method is the only one where most of the phosphate deposits of the West can be efficiently utilized without great waste. Engineering appraisals indicate only a 10-percent usefulness of some of the best deposits with the acid method, where with the electric furnace method 4 to 5 times as much of the rock could be used. It is possible this last consideration is much more important even than the cheap power rate. There will be a point where the power rate would be so high that it would outweigh the high transportation cost of phosphorus from other sources.

The present predicament in the West is the fact that there is not enough electric power at any cost available or in prospect to operate even one sizable efficient electric power recovery unit for elemental phosphorus.

More power in the West is absolutely essential. The cheapest electric power is from waterpower obtained only from public resources. At present the most highly regarded location from all standpoints as pronounced by competent engineers is at Hells Canyon. Hells Canyon can be developed by small dams which would provide power alone in limited quantities or it can be developed with a dam sizable enough to provide not only power in large quantities, but also irrigation water supplies and water transportation. In addition it can provide storage for existing downstream power projects now active which would practically double its potential and its usefulness. It will be self-liquidating as the Bonneville project has already proven to be.

For the general good and logically there is only one development which deserves consideration and that is the building of the high dam at Hells Canyon and incorporating it into the Bonneville system and retaining the Bonneville system control for the general good of all the people both in that immediate area and for the materials and especially the potential phosphorus supply for the whole Nation.

Our more than 250,000 farm families in the Northwest have in their annual farmers meetings passed resolutions (certified copies attached and available) expressing their desires and their interest in this solution. I am making this statement at their command.

STATEMENT OF JAMES G. PATTON, PRESIDENT OF THE NATIONAL FARMERS UNION, ON H. R. 4719, 4730, 4739, AND 4740 WHICH WOULD AUTHORIZE BUILDING OF THE HIGH HELLS CANYON DAM ON THE SNAKE RIVER

Mr. Chairman and members of the committee, as president of the National Farmers Union, I wish to present the views of my organization in regard to the bill sponsored by Mr. Morse and 29 other Senators, which will authorize building of the high Hells Canyon Dam on the Snake River in the Colorado River Basin watershed.

First I would like to especially commend the Senator from Oregon for his long-time and continuous effort to bring about the authorization of this project. I wish also to commend Senators Magnuson, Jackson, Murray, Mansfield, Neuberger, O'Mahoney, Anderson, Chavez, Clements, Douglas, Fulbright, Gore, Green, Hennings, Hill, Humphrey, Johnston of South Carolina, Kefauver, Kerr, Kilgore,

Langer, Lehman, McClellan, McNamara, Neely, Scott, Sparkman, Symington, and Young.

Authorization of the high Hells Canyon Dam would fulfill one of the legislative goals of the National Farmers Union. Our final objective is to establish an economy of abundance made possible through an expanding productive capacity. The goal: Maximum development of our natural resources can only be brought about by coordinating development of river valley basins. Our program includes the establishment of such a multiple-purpose development as Hells Canyon in every river valley in the Nation.

We have specifically endorsed Federal development of the high Hells Canyon project. I call your attention to a resolution adopted unanimously at the National Convention of Farmers Union on March 14, 1952, which is as follows:

"We also urge immediate authorization and appropriation of funds for the construction of Hells Canyon Dam and related public power development."

Our 1954 convention also endorsed the Hells Canyon project and spelled out our overall Federal development program. The resolution in regard to this program follows:

28. Rural Electrification and the Federal Power Program

"(*a*) To fulfill the responsibility of the Federal Government for assuring an electric power program that fully serves the people's needs, we favor the following principles:

"(1) Establishment by Congress of the principle of Federal utility responsibility for that portion of regional power supply required to meet the expanding needs of present or future nonprofit electric systems and to support sound expansion of the regional economy.

"(2) Legal provisions requiring that preference be given to public and cooperative nonprofit agencies in sale of wholesale energy produced by Federal projects must not be impaired.

"(3) Establishment by Congress of regional development agencies which will recognize hydroelectric development as a primary objective of multiple-purpose river-basin programs, but will also provide for the optimum conservation and development of all values, including flood control, navigation, irrigation, recreation, and others.

"(4) Construction by Federal agencies of steam-electric stations and transmission lines necessary to firm hydro power and meet power requirements of service areas, and to carry that power to load centers.

"(5) Limitation on the discretion of the Federal Power Commission to grant licenses for private development wherever they conflict with Federal program.

"(6) Full technical and financial support for the vertical as well as horizontal expansion of the rural electric program, including: Assistance to generation and transmission cooperatives where needed to provide the member cooperatives with an abundant power supply in the future; financial and technical assistance in acquisition programs; nd removal of population limitations on communities which rural electric cooperatives may serve, which are creating serious problems in connection with annexations and community growth, and which deprive communities of a free choice as to who shall serve them.

"(7) Establishment by Congress of interregional wholesale power supply grids interconnecting Federal hydroelectric systems, Atomic Energy Commission nuclear powerplants, local, public, and cooperative generating facilities, and private electric systems, with adequate provision to protect the preference and withdrawal clauses.

"(8) More active Federal development of atomic power by the Atomic Energy Commission in cooperation with the program of the proposed interregional grids. Atomic power so developed should be marketed as an element in the general power supply from the Federal grids under the general Federal responsibility set forth in this statement.

"(9) Federal legislation to disallow as costs in ratemaking any funds expended by any electric or other utility engaged in interstate commerce and enjoying guaranteed profits without economic risk while operating as a private monopoly under franchise privileges granted by the public, to finance or engage in either directly or indirectly, any activity designed to influence political action at either local, State, or national levels of government, or to create public opinion for or against any such actions. This legislation should be enforced by the Federal Power Commission and State utility commissions. The Internal Revenue Act should also be amended to preclude the chargingoff of expenditures for institutional advertising, contributions to organizations, or other public relations activ-

ities to expenses as deductions for tax purposes. Owners of electric utility companies should not be privileged to advance their personal political prejudices and interests by the expenditure of tax-free income which is collected from ratepayers above and beyond the legal fair rate of return.

"(10) Federal legislation requiring that benefits from accelerated tax amortization be passed on to consumers.

"(*b*) We are opposed to the following:

"(1) The Interior Department's new power policy.

"(2) The Missouri Basin power marketing criteria which penalizes public-power systems and farmer-owned electric cooperatives.

"(3) Violation of the Federal preference clause by long-term contracts, including wheeling agreements with private utilities without withdrawal provisions to protect preference customers, such as already negotiated by Bonneville Power Administration and those proposed in the Missouri Basin.

"(4) The cutback of REA loan programs and crippling of its technical assistance programs.

"(5) Any alterations of established credit policies of REA which might impair the financial feasibility of the cooperatives, thereby curtailing any necessary system improvements and expansion of service to unserved consumers.

"(6) Federal withdrawal of opposition to the licensing of private power dams at Hells Canyon which will ignore tremendous downstream power benefits and great secondary flood control, irrigation, navigation, recreation, and other conservation benefits.

"(7) Federal withdrawal of opposition to private power dam license on the Kings River in California.

"(8) Surrender to the private utilities of public power from the Central Valley project in California and destruction of the Federal preference provisions by disposal of Central Valley properties to the State.

"(9) Repeal of the 160-acre limitation on the use of water in Federal irrigation projects in the Federal reclamation law.

"(10) The shameful repudiation of legal contracts between Southwest Power Administration and REA generating and transmission cooperatives.

"(11) The proposed giveaway of Niagara Falls to five power companies, and the licensing of a New York State development on the St. Lawrence River without provision for preference to public and cooperative bodies.

"(12) Failure to maintain an adequate rate of generation installation in the Tennessee Valley and the Columbia River Basin.

"(13) The proposed Georgia contract which would establish private monopoly tollgates between Federal projects and public preference customers.

"(14) Elimination of new starts and slowdown of projects through unwise reductions of Federal investments provided in the annual national budget.

"(15) Retarding of industrial growth by refusal to sell additional power from Federal transmission systems directly to new industry.

"(16) Packing of administrative agencies and regulatory bodies and commissions with enemies of the public-power programs.

"(17) Wrecking sound conservation of the past 50 years by removing the Federal Government from responsibility for full multiple-purpose development of the Nation's river basins.

"(18) Inequitable allocation of project costs to power by deliberate, unwarranted, and unfair deflation of other multipurpose use costs so as to increase electric rates.

"(19) Proposals for a Federal tax on income of Federal municipal and cooperatively owned power systems, and to a Federal tax on municipal bonds.

"(*c*) We insist that during the coming session of Congress authorizations and appropriations be made, adequate to provide the electric power and transmission lines necessary to give substance to the true Federal-local partnership power program which is based on legislation dating through a half century.

"(*d*) Necessary Federal construction programs should be planned on a 20-year basis, with authorization of construction geared to the needs of at least the 6 succeeding years, and with construction scheduled so as to assure the lowest possible construction costs.

"(*e*) The next session of Congress should approve funds for the construction of projects, chosen from among those already authorized or planned so as to meet the power needs of all areas of the Nation and assure abundant energy for national defense and full employment.

"(*f*) The cause of the Central Valley of California, the New York-New England area Hells Canyon, the Columbia Basin, the Tennessee Valley, the upper Colorado, including Echo Park, the Missouri, the Southwest, the Southeast, and other

areas is each the cause of everyone of us. Assurance of the continuation of the REA program in all areas, including an adequate and expanding generation and transmission program for the future, is also the cause of all of us.

"(*g*) Our Congressmen and Senators must be urged to support Federal development programs in every area. They must be judged on across-the-board support of a total national program and not on their votes on local projects alone.

"(*h*) Our growing unity must be perfected."

Farmers Union public-power and rural-electrification program has its roots in Federal power and reclamation policies which go back more than 50 years. When it became apparent that corporate groups were about to take over all of the power sites in the Nation, as well as other natural resources, certain individuals, such as Theodore Roosevelt, Gifford Pinchot, and numerous others inaugurated a conservation movement which resulted in the congressional approval of the so-called preference principle, which reserves to the people the first chance to buy power generated at Federal power projects. Parallel with and even antecedent to the writing on the books of the preference statute was the 160-acre limitation law which provided that irrigation benefits from Federal projects should be limited to 160 acres for each family.

The preference principle or clause, as it is sometimes called, is written into numerous statutes, including Reclamation Act of 1906, the Federal Power Act of 1920, the TVA Act of 1935 and the 1944 Flood Control Act. It has been endorsed alike by leaders of both political parties. It has never been a matter of controversy. It has been accepted alike by courts, by administrators and Congressmen, whether Republicans or Democrats.

For example, a great Republican leader, Charles McNary, who has been recently praised by the Eisenhower administration, says:

"Unfalteringly the Congress has granted to the public preferential rights to power generated from navigable streams.. Such power should be a common heritage. The Government, having made this power available, should have an indisputable right to control its utilization and distribution. Maximum benefits for domestic consumers, farmers, and small users of power should be the yardstick by which we measure the usefulness and serviceability of every Federal development. Moreover, rates should be maintained at the lowest level consistent with sound amortization. Where irreconcilable conflicts arise between public and private interests in the development and distribution of power, private holdings should not be confiscated; and we now have a working precedent for such fair treatment in the recent acquisition by purchase of private companies by the Tennessee Valley Authority."

And recently a great Democratic leader rose on the floor of the Senate and made these remarks during the discussion of the Morse proposal to authorize the high Hells Canyon Dam:

"Mr. President, I think it will be a sad day for the American people if these great arteries of commerce, which, under the decisions of the Supreme Court, have repeatedly been declared subject to regulation by Congress, are taken away from the people and turned over to private control. I am in favor of private enterprise. I am interested in it, and I am for free enterprise. But when it comes to the great natural resources given to the people by God Almighty, it will be a sad day in the history of this country when they are turned over exclusively to the control of any private group. That is why I feel so profoundly upon the subject of retaining in the control of the people and the Government of the United States the development, improvement, and utilization of these great natural resources for the American people. That does not exclude their utilization for private industry." (Statement of Alben Barkley.)

Since public-power policy was so clearly and firmly established by numerous laws, Executive orders and administrative regulations, it followed, as a matter of course, that the Department of Interior and other Departments concerned with the administration of public power carried out the preference clause and related statutes conscientiously and attempted to fulfill, not only the letter but the spirit of the law. Administrators looked on themselves as guardians of the public interest. They attempted to carry out congressional policies in regard to conservation of natural resources, including water and electric power. They were opposed to greedy private interests which attempted to take over the people's resources. For example, Oscar Chapman, former Secretary of Interior, opposed the action of the Idaho Power Co., when it attempted to block the high Hells Canyon Dam by applying for a license to build a small dam which would deny the people the right to develop a program which would control floods, conserve water, produce maximum amounts of power and make possible an integrated system of flood control and electric power in the Northwest.

This administration has reversed the historic policy of Congress in regard to public power which has existed for more than 50 years. Present Department of Interior administrators instead of carrying out their solemn oath of office no longer are guardians of the public interest but are partners of the private power gang which would despoil and steal the people's resources. In 1953, Clarence A. Davis, solicitor in the Department of Interior, informed the Federal Power Commission that the Department was withdrawing as intervenor in the matter of Idaho Power Co. project No. 1971.

In his covering letter Solicitor Davis indicated that the granting of licenses was a responsibility of the Federal Power Commission and not the Department of Interior. Then in a supplementary memorandum, Davis set forth spurious arguments in support of the Idaho Power Co.'s application and against the proposal to build a high dam. He points out that the cost of Hells Canyon project was not small "in the light of the present efforts to balance the budget." He related the Hells Canyon project to other projects, implying that the Hells Canyon Dam would be a failure economically unless other expensive projects were built, also. He pompously stated that the Department of Interior was interested in the present critical power shortage and concluded by saying:

"Therefore serious consideration should be given to the proposal of the Idaho Power Co."

Thus the servant of the people betrayed the people by a plea in behalf of those who would despoil the people's resources. Government technicians worked for many years to evolve the best comprehensive plan possible for the Columbia Basin. The high Hells Canyon was a part of that plan, but the present Department of the Interior has seen fit to ignore engineering studies developed over a period of years. Let us look for a moment at the Idaho Power Co. which the Eisenhower administration apparently regards as a local interest. At the time, the Department of the Interior was withdrawing from the Hells Canyon proceeding before the Federal Power Commission, the company was holding its annual meeting in Bangor, Maine, 3,000 miles away from the Hells Canyon site. Present at the meeting were representatives of the great eastern bankers and insurance companies which own 93 percent of the company's stock. These "local interests" include: Steere & Co., Philadelphia; Aetna Life Insurance Co., Hartford; Baer Stearns & Co., New York City; Catton & Co., Boston; Eastman Dillon & Co., New York City; Hallgarten & Co., New York City; John Hancock Mutual Life Insurance Co., Boston; Northwestern Mutual Life, Milwaukee; Olen & Co., Chicago; and New England Mutual Life Insurance Co., Boston. These are the 10 largest stockholders of the Idaho Power Co.

There is some question as to whether the Idaho Power Co. is interested in building even 3 small dams on the river. The company has had title to Oxbow site in the middle stretch of the Snake River since 1916. It showed no interest in developing that site until 1947, when it filed application for a preliminary permit with the Federal Power Commission. This filing was made after the first public hearing on a Federal Hells Canyon project had been announced. The Idaho Power Co. contends that building of the Federal project would result in loss of taxes. We have briefly answered this contention in the statement of Mr. Huff. The Idaho Power Co. didn't point out to the Federal Power Commission that it had applications pending at the Office of Defense Mobilization for two of the dams they wanted to build. Nor did they explain that they had already been awarded certificates permitting them to deduct $10.8 million from their taxes over a 5-year period. If the Idaho Power Co. gets the same rate of accelerated amortization that it received on previous hydroelectric developments on the Snake River, it will be able to deduct more than $50 million on its tax bill, over a 5-year period.

Mention should be made of the millions which the private power monopoly is pouring into the private power campaign to confuse and befuddle the public on Federal power. Two years ago, when the previous Hell Canyon bill was under consideration, the power company deluged the country with lying propaganda. It spent as much as $50,000 on one ad in a national weekly or monthly magazine. The campaign at the present time reaches into every home in America. The power companies have their own television and radio programs. They have recently printed full-page ads in Collier's magazine and the American Magazine and numerous publications of large circulation. The irony of it is that the American people are paying for all of this propaganda, for each and every advertisement which seeks to convince the American people that if we don't sell TVA or hand over Hells Canyon to the Idaho Power Co. and sabotage public power generally, we are hell bent for socialism and bureaucratic tyranny.

Finally, I want to urge the committee to approve the Hells Canyon bill, not only because it will authorize generation of much needed power in the Northwest and contribute greatly to the economy of the Northwest, but because it will contribute indirectly to our general economic situation. At the present time unemployment in cities and expanding markets for farm products are real problems. Building of hydroelectric projects means employment, not only for those working on the project but those manufacturing and processing raw materials which go into the products and the employment of additional people engaged in food distribution, and it means better markets for farmers.

Development of the Hells Canyon project is also necessary for national defense. The Northwest has contributed much from the Federal dams already built to the security of the United States—over one-third of aluminum production for the Air Force that won World War II; contributed plutonium for the atom bomb; and other critical materials. Back in the 1920's the Washington Water Power Co. tried to block Grand Coulee Dam by proposing a small dam at Kettle Falls. Had the company won, the country would have lost Coulee Dam, the atom bomb, the aluminum plants, and the Columbia Basin irrigation project on which many veterans are settling. The fullest development of the Columbia River means the greatest possible security and economic gain to the entire country.

The present defense program is consuming more and more power for atomic energy and the manufacture of aluminum, magnesium, and other defense material. When the present shortage of power in the Northwest is considered together with the need for additional power for the national-defense program and all of the other reasons which our witnesses have outlined, the evidence is overwhelming in favor of full development of resources in the Northwest and the building of the high Hells Canyon Dam.

STATEMENT IN SUPPORT OF AUTHORIZATION OF FEDERAL CONSTRUCTION OF HELLS CANYON DAM BY THE WASHINGTON PUBLIC UTILITY DISTRICTS ASSOCIATION, SEATTLE, WASH.

This association, comprised in membership of 23 public-utility districts serving in excess of 216,000 electric customers in the State of Washington, adopted the following resolution in support of S. 1333, on June 10, 1955. S. 1333 is the Senate version of the House bills introduced by Representative Don Magnuson of Washington State (H. R. 4739) and others, which are now before your committee.

"HELLS CANYON BILL

"Whereas the Reclamation Subcommittee of the Senate Committee on Interior and Insular Affairs has recommended adoption of Senate bill 1333 to authorize Hells Canyon Dam: Now, therefore, be it

"*Resolved*, That we specifically endorse Senate bill 1333." This resolution endorsing specific proposed legislation followed a more general endorsement for authorization of Federal construction of the Hells Canyon project adopted by this association at our regular annual winter meeting held in Seattle, Wash., December 2–4, 1954. This resolution was as follows:

"SUPPORT OF HELLS CANYON DAM

"Whereas the fundamental issue involved in the Hells Canyon controversy is partial versus full development of a natural resource, since the proposal to construct 3 low dams would mean sacrificing over 2 million acre-feet of the storage which a high dam would provide for flood control and for firming up downstream generating plants—both existing and future; and

"Whereas under the PUD law it is the function of public-utility districts to 'conserve the water and power resources of the State of Washington for the benefit of the people thereof'; and

"Whereas the Army engineers' 308 report on the comprehensive development of the Columbia River drainage basin recommends the construction of both Libby Dam and a high Hells Canyon Dam; and

"Whereas the Federal administration has advocated the construction of Libby Dam as soon as possible; and

"Whereas the same arguments in favor of constructing Libby apply to a high Hells Canyon Dam, with the added advantage that the Hells Canyon site does

not involve international problems of the type which promise to preclude the possibility of early construction at Libby: Therefore be it

"*Resolved*, That in order to insure preservation of the Hells Canyon site for maximum realization of the potential benefits, the Congress of the United States be urged to authorize the project for Federal construction and to appropriate the necessary funds for that purpose and for the construction of the necessary transmission lines to integrate the project into the Federal hydroelectric grid and for the construction of subtransmission lines and substations needed to deliver power at utility load centers, there to be marketed under the provisions of the Bonneville Act; and be it further

"*Resolved*, That copies of this resolution be forwarded to our Washington delegation in both Houses of Congress, and that they be urged to sponsor the necessary legislation to be introduced when the new Congress convenes in January 1955."

Our more recent endorsement of S. 1333 followed the filing of the decision of the presiding examiner in the FPC Hells Canyon hearings on May 6, 1955. Examiner William J. Costello ruled in his decision in favor of granting a license to the Idaho Power Co. for the construction of the Brownlee Dam only, of the three for which the company had applied for license.

More important than the actual ruling made by Examiner Costello, however, were his findings with respect to the relative merits of the two proposals—Idaho Power Co.'s plan for three low dams, and the single high dam alternative constructed by the Federal Government. These findings clearly demonstrate the superiority of the Federal project.

Some of the advantages of the Federal project over the Idaho Power Co. plans, as substantiated by the findings of the presiding examiner, are these:

The Federal high dam would provide more power at lower cost.

It would make a greater contribution to flood control.

It would provide a better transportation medium.

There would be integration of the power output into the Northwest power pool, while the transmission facilities proposed for the three-dam plan are not designed for a fully integrated operation with the Federal Northwest power system and there has never been any proposal or suggestion that the application would engage in such an operation.

The Federal project would stimulate greater development of phosphate resources and other mineral developments.

It would stimulate greater expansion of electroprocess industries.

It would make a greater contribution to irrigation.

Recreation benefits would be greater.

Indeed, the examiner finds, "the facts seem to point to the inescapable conclusion that with the marked and substantial advantage of the Government's credit, the high dam would be dollar for dollar the better investment and the more nearly ideal development of the middle Snake."

Despite these findings of the superiority of the high-dam plan, however, the examiner has ruled in favor of granting a license to the Idaho Power Co. rather than recommending to the Congress Federal construction of the high dam, as section 7 (b) of the Federal Power Act would seem to have required him to do. Instead he argued, "the likelihood of the authorization of an appropriation for an undertaking of the size involved in the high-dam project is so remote as to make a recommendation to the Congress under section 7 (b) that such a dam be undertaken by the United States a completely useless action."

We submit that this political prognostication by the FPC examiner was totally inappropriate as the basis for a decision as to how development of the Hells Canyon site should proceed. The people of the region and the Nation look to the Congress to refute this forecast and this decision by authorizing the Federal construction of the high dam. Only in this way can the full potential of this valuable site be realized.

We respectfully urge your support of the legislation.

Mr. ASPINALL. The Chair recognizes the gentleman from Idaho, Mr. Budge, for an opening statement.

Mr. BUDGE. Mr. Chairman, I should first like to read——

Mr. HALEY. Will the gentleman yield?

Mr. BUDGE. Yes.

Mr. HALEY. I just want to say to the gentleman that I, too, regret that insinuation has been cast here on the gentleman. I think he is a

fine outstanding Member of this Congress, and I regret that any witness appearing here would make the charge or insinuation such as has been done.

Mr. BUDGE. I very much appreciate the remarks of the gentleman from Florida. Of course, this is the first time I have heard that the Library of Congress slanted things when you asked them a question and they wrote you a 47-page opinion on it. But I guess that is the way things are sometimes.

I would like to read to the committee two telegrams addressed to the chairman of the committee and one addressed to me from the Governors of the affected States.

This telegram is dated July 12 and addressed to Hon. Wayne N. Aspinall.

Have consistently opposed high Hells Canyon Dam because of the engineering fact developed by reason of the extensive study by Holland Houston and additional information gathered from Army engineers and others qualified to evaluate the cost and benefit ratios of power and storage installations. I have personally appeared before the Senate committee hearings re this matter. Believe Hells Canyon uneconomical and unwise as an integrated part of the Columbia Basin development.

ARTHUR B. LANGLIE,
Governor of the State of Washington.

This telegram is dated July 8:

Hon. WAYNE N. ASPINALL,
Chairman:

Wish to reiterate my opposition to S. 1333 and House counterpart of same bill. My statement in opposition can be found in hearings before Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs of the United States Senate at page 260.

PAUL PATTERSON,
Governor of Oregon.

This telegram is dated July 13:

Hon. HAMER BUDGE,
Member of Congress:

Reference hearing on bill now pending in House to authorize Hells Canyon project. I will appreciate your incorporating my testimony in opposition to S. 1333 which appears in the published hearings on that bill beginning at page 3, in the record of the House committee hearings now being held. Please convey my regards to Chairman Aspinall.

Sincerely,

ROBERT E. SMYLIE,
Governor of Idaho.

At this point, Mr. Chairman, I would like to call Mr. R. P. Parry——

Dr. MILLER. Will the gentleman yield first?

Mr. BUDGE. Yes.

Dr. MILLER. Do I understand the three governors of the States affected are opposed to Hells Canyon Dam?

Mr. BUDGE. Yes, sir. They all made statements before the Senate committee just 30 or 60 days ago. I ask unanimous consent that their statements which they have asked me to incorporate be incorporated at this point in the record.

Mr. EDMONDSON. Reserving the right to object——

Dr. MILLER. Is it also true that the Department of the Interior stated that because the problem is now before the Public Power Commission, which has not made a decision, they also oppose construction of the high Hells Canyon Dam?

Mr. BUDGE. That is correct. There are two reports from the Department of the Interior, both of them adverse reports, 1 addressed to the Senate committee and 1 addressed to the House committee, and I assume they will be made a part of the record.

Mr. ASPINALL. If the gentleman will yield——

Mr. EDMONDSON. Reserving the right to object.

Mr. ASPINALL. Just a minute. The chairman is asking for the gentleman from Idaho to yield to him.

Mr. BUDGE. I yield.

Mr. ASPINALL. The report has not yet been made a part of the record. In conformity with all of the procedures we have had on these bills, the Chair would ask unanimous consent it be made a part of the record.

Mr. EDMONDSON. Reserving the right to object as to the statements of the Governors before the Senate committee. May I ask the gentleman if he is limiting that to their prepared statements or if that will include questioning and cross questioning?

Mr. BUDGE. It would include their entire statement. That would be my request.

Mr. EDMONDSON. It would include both the questioning and the cross questioning by both proponents and opponents?

Mr. BUDGE. Yes; it would be the whole picture.

Mr. EDMONDSON. I have no objection.

Mrs. PFOST. Mr. Chairman——

Mr. ASPINALL. Just a minute. The Chair is involved here. Did the gentleman make any request to have the testimony of the Governors which was given before the subcommittee in the Senate made a part of our record?

Mr. BUDGE. I do, Mr. Chairman.

Mr. ASPINALL. You had not yet?

Mr. BUDGE. Yes, sir; I had asked unanimous consent and the gentleman from Oklahoma had reserved the right to object.

Mr. EDMONDSON. But I have no objection, Mr. Chairman.

Mrs. PFOST. Mr. Chairman, I would like at this point to——

Mr. ASPINALL. Are you reserving the right to object to the request?

Mrs. PFOST. Yes; I reserve the right to object.

Mr. Chairman, the Senators from both Washington and Oregon have taken their view in favor of this project, and the two Idaho Senators have not. But I want to call attention to the fact that there are four Senators in the States of Washington and Oregon who do favor the dam.

Mr. BUDGE. Mr. Chairman, my time is running out. You have already gotten permission for any Member of Congress to put a statement in here. If you want to get the Senators in, put them in.

Mrs. PFOST. All right, Mr. Chairman, that is the request I wanted to make.

Mr. ASPINALL. You have that permission already.

Mrs. FROST. Thank you.

(COMMITTEE NOTE.—The statements of Governors Langlie, Patterson, and Smylie before the Senate Interior and Insular Affairs Committee are as follows:)

STATEMENT OF HON. ARTHUR B. LANGLIE, GOVERNOR OF WASHINGTON

Governor LANGLIE. Mr. Chairman and members of the committee and Members of the House of Representatives, I appreciate the opportunity of appearing before you and making this statement regarding the Hells Canyon project.

IS HIGH-HEAD HELLS CANYON PROJECT A REASONABLE COMPONENT OF THE PACIFIC NORTHWEST POWER PROGRAM?

Development of the natural resources of the Pacific Northwest has been a continuing challenge since Lewis and Clark first viewed the mightly Columbia as they neared the end of their westward expedition. In no area has the political conflict exceeded that which has arisen with respect to the Hells Canyon reach of the Snake River.

As early as 1926, the Congress of the United States requested that the Army engineers study the Columbia River to determine a program for development of navigation, flood control, irrigation, and the electric-power potential. The Army engineers made their first report to Congress in 1932 and were again requested in 1943 to review this initial report and make a more complete survey and determine the requirements of flood control, navigation, irrigation, and electric power in terms of the needs of the development of the Pacific Northwest. This review report, known as House Document 531, dated October 1948, was presented to Congress by the Chief of Army Engineers with a letter dated June 28, 1949.

At the time the initial studies were undertaken for this review report in 1943, the total electrical load on the system which now comprises the Northwest power pool was something less than 3 million kilowatts. It was estimated that the total hydroelectric potential in the Columbia River Basin was in excess of 30 million kilowatts. It appeared at that time that it was reasonable to assume that the electric-generating resources of the area would be largely hydroelectric for many years to come. The Army engineers made their studies on the basis of an all-hydroelectric Federal system which, according to their calculations, would be capable of serving the power needs of the area until about 1970 or 1975.

The total electric-load demand of a power system varies through a wide range. Maximum daily demands occur with coincident demand of industrial, commercial, and residential use. Minimum demands exist during the late night hours. The demand of the metropolitan areas are maximum in the winter months, the demands of the agrarian areas with large amounts of irrigation are maximum during the irrigation-pumping season. On a system with only hydroelectric resources it is necessary to regulate the energy of streamflow to fit the ever-varying electric-load demands of the area. Daily pondage is used to store night flows for daytime energy; annual storage reservoirs are used to store the snowmelt floods of the spring and summer months for release during the low-flow winter months. The maximum flows of wet-water years must be stored for use in years of adverse streamflows. The annual discharge of the Columbia River varied from a high of 225 million acre-feet in the year of 1894 to a low of 85 million acre-feet in the year of 1926. House Document 531 contained a program for the development of 41 million acre-feet of storage on the Columbia River upstream from The Dalles project. As long as the assumption was valid that all the generating resources were hydroelectric, the building of more and more upstream storage to increase the minimum regulated flow of the river was justified.

House Document 531 shows that it is possible to develop approximately 32 million kilowatts of hydroelectric power in the Columbia River Basin if 124 million acre-feet of storage are used to regulate streamflow. The Army engineers also studied the need of upstream storage to control the major floods of record in the Columbia River Basin. The Army engineers also presented a flood-control program in which approximately 27 million acre-feet of storage were used to control the 14 million acre-feet of water in the crest of the 1894 flood above a discharge of 800,000 cubic feet per second at The Dalles. The study showed that storage on the upper reaches of the Flathead, Clark Fork, and main stem of the Columbia in Canada was less effective in controlling the flood on the lower Columbia than storage on some of the smaller tributaries lower in the basin.

Public hearings were held by the Army engineers throughout the basin, and in general there was objection to the location of flood control and power reservoirs in valleys that inundated important agricultural areas. The choice of upstream storage reservoirs was not one of maximum benefit but one of compromise.

In recent years there has been a great advance in the development of steam-electric generation. Since the time of the initial Army report on the development of the Columbia River, the art of conventional steam-electric generation has advanced to a point where only about one-third as much coal is required to generate a kilowatt-hour of electricity. Today atomic energy as a source which can be transformed into electric energy is developing rapidly.

LOAD GROWTH

Studies made by the Columbia Basin Interagency Committee, the Pacific Northwest Governors' Power Policy Engineering Subcommittee, and other independent studies shown that the long-time trend of load growth in the Pacific Northwest conforms closely with the average rate of growth of sales of electric energy for the United States as a whole. This is at a rate of between 6.8 and 7 percent compounded continuously, as shown in figure 1. It took from the beginning of the electric power development in the Pacific Northwest to 1928 for the peak load of the systems which now comprise the Northwest power pool to grow to 1 million kilowatts. By 1960 the system peak load at this same rate of growth will increase by 1 million kilowatts in 18 months. The problem of meeting increased system demand is more acute today than ever before in the history of electric power in the Pacific Northwest. This last winter the system peak of the Northwest power pool reached 7.5 million kilowatts. The average annual rate of growth of the peak load at the present time is in excess of 500,000 kilowatts each year. The average rate of growth between 1955 and 1965 will be about 650,000 kilowatts each year.

A reasonable figure for hydroelectric project development and transmission to the principal load centers of the area during the next few years is about $500 per kilowatt. This means that the average investment over the next 10 years for power supply in this area will be about $325 million a year. It is evident that our problems are not entirely political and technical but have their important financial aspects.

Perhaps the most important aspect of load growth in the Pacific Northwest is that at the present rate of growth all potential hydroelectric projects in the basin less costly than steam would, with an orderly program of development, be in operation not later than 1965 or 1970. Hence before the midpoint of the economic life or payout period of a project under construction today is reached, there will be large amounts of thermal-electric generation in operation on the system of the Northwest power pool.

DISCUSSION OF UNITED STATES SENATE BILL 1333

Senate bill No. 1333, dated March 8, 1955, was read twice and referred to the Committee on Interior and Insular Affairs. There are several quite interesting passages in this bill.

Beginning with page 1, line 3, this bill states:

"* * * That in order to foster comprehensive development of the resources of the Snake River and its tributaries, the Congress, in the exercise of its constitutional authority to provide for the general welfare, to regulate commerce among the States, and to make all needful rules and regulations respecting property belonging to the United States, and for the purposes, among others, of controlling and utilizing the Snake River and its tributaries for beneficial objects, including generation of hydroelectric power and energy for the national defense and other purposes, irrigation of lands, navigation and flood control, and for purposes incidental to any of the foregoing, including providing financial assistance to Federal reclamation projects, the Department of the Interior, under the supervision and direction of the Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized and directed to construct, substantially in accordance with the physical plans set out in the reports referred to hereinafter as—

"(a) the Hells Canyon Dam, as described in volume 2 of House Document Numbered 473, Eighty-first Congress, and as modified by the report of the Commissioner of Reclamation, approved by the Secretary on May 11, 1951; *" * *

Though this bill has been presented and read twice, up to now no comprehensive program of development of the Snake River and its tributaries has ever been made. House Document 473, page 205, has two paragraphs outlining possible power development in the Clearwater Basin. The first paragraph copies the figures from House Document 531 for the Kooskia project, which were prepared by the Army engineers, and the second paragraph suggests that there might be 137,000 kilowatts of additional capacity installed in the basin. Discussion of the development of the Salmon River is of the same order. This in spite of the fact that the Clearwater and Salmon Rivers are the two worst flooders of the entire Columbia River Basin. In the 1948 flood a peak of 1,050,000 cubic feet per second was reached at The Dalles. The peak flow of the Clearwater River was 177,000 cubic feet per second, and of the Salmon River 103,000 cubic feet per second. The main stem of the Snake River at Hells Canyon contributed only 55,000 cubic feet per second.

It would appear that the term "comprehensive" as used in this bill is indicative of the narrowness of the point of view of the authors rather than the actual breadth of the program being considered.

In a recent study entitled "Review Report on the Columbia River and Tributaries, Middle Snake River Basin," the Army engineers have chosen the most feasible storage in the Clearwater Basin to be at Bruces Eddy and Penny Cliffs projects, with a total installed capacity of 532,000 kilowatts and total usable storage of approximately 4 million acre-feet. This storage, together with about 2 million acre-feet on the Salmon River, is sufficient to complete the control of the lower Snake River Basin.

Comprehensive flood control in the Snake River Basin, to be effective therein, should necessarily be located on the upper reaches of the Snake and on such tributaries as the Payette and Weiser Rivers, where such storage would have the multiple-use benefits of irrigation and flood control.

Referring to House Document 473, volume II, page 121, paragraph 33, we find the method of operation of this project described in detail, as follows:

"33. Operation of the Hells Canyon project to firm up the output of the existing and authorized Federal powerplants in critical runoff periods would require such a heavy drawdown of the reservoir that powerloads of the upper Snake Basin could not be met by output of the plant while the reservoir was being refilled. During such periods when refilling of the reservoir was required to assure the availability of storage water during the next critical period, records indicate that there would be ample summer flows in the Columbia and lower Snake Rivers for the production of large blocks of dump and secondary energy at plants on those streams. To permit refilling of the Hells Canyon Reservoir, this secondary energy would be generated for export to the upper Snake Basin and would be used in conjunction with winter output at Hells Canyon to meet firm powerloads in the upper Snake Basin. The Hells Canyon project thus would be an integral part of both the upper and lower Columbia River power systems."

This method of operation was used in House Document 473 as a basis of calculating the payout schedule included in table 10, following page 202 of House Document 473. This method of operation applies only to an all-hydro system and is interested only in the so-called nominal prime capability of the system, which is the average energy under adverse water conditions. Operation under this method calls for the drafting of all storage reservoirs during the adverse-flow period. In this particular operation the Hells Canyon Reservoir would be drafted a maximum of 289 feet, reducing the dependable capacity of the project by about one-half.

It is interesting to note that the Senators, in preparing this bill have completely ignored recent studies of the Army engineers, the CBIAC and the testimony given in the hearing on Hells Canyon before the Federal Power Commission as to the proper method of evaluating a hydroelectric project which is a component of a system with large amounts of both thermal-electric and hydroelectric projects. On such a combined system, storage reservoirs are not drafted for energy in a critical water year. Full reservoir is maintained so as to retain the dependable capacity of the hydroproject and steam-electric units are operated a greater number of hours to furnish the required system energy.

From the standpoint of electric power, water stored in a storage reservoir such as is proposed at Hells Canyon has energy value only, and then only if water is stored that would otherwise be spilled over the dam at site and downstream. Less than 2 percent of the river discharge by Hells Canyon could be usefully stored with the high-head Hells Canyon operating as a component of a combined steam and hydrosystem.

The method of determining the value of high-head Hells Canyon project used in House Document 473 is no longer considered correct.

Referring again to the bill, page 3, line 10, reads as follows:

"SEC. 3. (a) In order to facilitate the development of the central and upper Snake River Basins, and also that of downstream areas, the Hells Canyon Dam and powerplant and the Federal Columbia River power system shall be interconnected, and 500,000 kilowatts of power attributable to the Hells Canyon project, or such portion thereof as is required from time to time to meet loads under contracts made within this reservation, shall be made available for use in the central and upper Snake River Basins and to all other parts of Idaho lying outside the central and upper Snake River Basins."

The total average annual energy output of the high-head Hells Canyon Dam, assuming no draft of storage and continuous operation at maximum head, using the depleted streamflow as stated in the May 1951 Depletion Study of the CBIAC, is only 541,000 average kilowatts. This bill, although the Snake River forms a boundary between Idaho and Oregon, would give 500,000 kilowatts of power attributable to Hells Canyon project for loads in the central and upper Snake River Basins. What does Oregon get?

It would also seem reasonable to ask the question of how this 500,000 kilowatts of load is to be served in southern Idaho when the average output of the Hells Canyon project for at least 3 months each year will not exceed 85,000 kilowatts, and this during the period of maximum irrigation pumping load in southern Idaho.

COMPARISON OF ANNUAL COSTS AND BENEFITS OF HIGH- AND LOW-DAM PROJECTS

As previously discussed, some additional thermal-electric generation will be constructed in the area served by the Northwest power pool within the next 10 years. The amount of thermal-electric generation will gradually increase throughout the payout period of any hydroelectric project now under construction or to be built at a future date. The only acceptable method throughout the United States for evaluation of a hydroelectric project as a component of a system including both thermal-electric and hydroelectric resources is the average dependable capacity method.

On a system with both thermal-electric and hydroelectric resources, the reservoirs of storage projects will be drafted only on a forecast basis when snow-pack reports indicate runoff in excess of the hydraulic capacities of the installations on the main stem of the Columbia and its principal tributaries. In an adverse water year, storage reservoirs would not be drafted until after the annual system peak has been experienced and the load requirements of the system have begun to decrease. The value of each project will be measured in terms of the average annual energy produced in kilowatt-hours and the capacity of the project dependable on the load curve of the Northwest power pool system. The following tabulation has been prepared to show the relative energy value and the dependable capacity of the proposed single high-dam project at Hells Canyon and the three low-dam projects as proposed by the Idaho Power Co.

The tabulations are based on the ultimate depleted flow of the Snake River at Hells Canyon. The installed capacity of the high dam was assumed to be 900,000 kilowatts and the total installation of the three low-head projects 1,300,000 kilowatts.

Power values based on ultimate installations of the 2 proposals and ultimate depleted flow of the river at Hells Canyon

	Single-dam project	3-dam project
Total plant investment	$397,800,000	$181,000,000
Dependable capacity, kilowatts	900,000	1,300,000
Annual generation, billions of kilowatt-hours	4.75	4.75
Dependable capacity, at $8.50 per kilowatt-year	$7,650,000	$11,100,000
Energy value, 4.75×109 kilowatt-hours, at 3.39 mills per kilowatt-hour	$16,100,000	$16,100,000
Total annual value of project	$23,750,000	$27,200,000
Annual cost on public fund basis, at 5.2 percent of investment	$20,700,000	$9,400,000
Benefit-to-cost ratio	1.15	2.89
Excess of annual value over annual cost	$3,050,000	$17,800,000
Cost per kilowatt-hour of average annual kilowatt-hours, mills	4.35	1.98

These figures are in accordance with figures given in House Document 473 for the single-dam project and the request for license filed with the Federal Power Commission for the three low-dam projects and the data presented by the several witnesses before the Federal Power Commission relating to this project. Stream flows used in this table are as shown in figure II.

This tabulation shows that the excess of annual value over annual costs is $3,050,000 for the high-dam project as compared with $17,800,000 for the three low-dam projects. This comparison is made on the basis of both developments from public funds.

The average cost per kilowatt-hour of the high-dam project is 4.35 mills per kilowatt-hour as compared with 1.98 mills per kilowatt-hour for the cost of energy for the three low-head projects.

A QUESTION

Viewed from the standpoint of logical power development in the Pacific Northwest, the high-head project in the Hells Canyon reach of the Snake River appears to be a phony. Flood control would be better placed farther up the river; there is no relationship between high-head Hells Canyon project and irrigation; and the power costs are at least double that which can be accomplished by three low-head projects in the same reach of the river.

With these thoughts in mind, it seems to me that we must take another look and search for what may be the real purpose of this development of storage in this reach of the Snake River. It may be that those who are sponsoring the bill for the high-head project do not know the real purpose of this project. It is difficult to speculate on the objectives that others have in mind, but since this project is so completely inconsistent with the low-cost development of the power-control facilities on the Columbia River, it is necessary to speculate on what the real purpose of the development of this high-head project may be.

Under the supervision of Michael W. Strauss, Commissioner of the Bureau of Reclamation, under the previous administration, a report was prepared which is entitled: "United Western Investigation." This report is dated January 1951. Table 30 of this report outlines 25 possible projects which could be developed to divert water from the rivers of the Pacific Northwest into California, Arizona, New Mexico, Nevada, and Colorado. One project suggests the diversion of water from the coastal river of Oregon to California. Another project suggests water be taken from the Albeni Falls Reservoir on the Washington-Idaho border, 1,020 miles into the Klamath River. Another project would take one-half the water from the Willamette River to California. Other projects include diversion from the Snake River, the Salmon River, and the Clearwater River in Idaho.

Perhaps the most definite project was the one entitled "Northern California Diversion." It is interesting to note what is said with respect to this project in paragraph 14 of the memorandum from S. P. McCasland to Michael W. Strauss, Commissioner of Reclamation. This memorandum was dated December 16, 1950. Paragraph 14, page viii, reads as follows:

"14. The above plan is herein contemplated as the initial stage of a larger development. As set forth it would meet the most imminent demands and could stand as a complete and final project, or might serve as the initial stage of a larger plan to meet greater demands as future economy may dictate. In the initial stage, export of some 6 million acre-feet per year could be made from the lower Klamath River and delivered to irrigators, industries, and municipalities in the central valley of California, and the central and south coastal areas of that State. By exchanges, similar service would be possible in the Mojave Desert, of California; the Lahontan Basin, of Nevada; the Colorado River Basin in California, Arizona, Nevada, Utah, Colorado, and Wyoming, and possibly elsewhere.

"The following tabulation is taken from the same report to Commissioner Michael W. Strauss and lists some of the more important physical data of the northern California diversion project. It will be noted that the total length of the water aqueduct is 1,463 miles, including 222 miles of tunnel and 605 miles of main aqueduct.

"If the northern California diversion project is considered only an initial stage of a larger development, it would be entirely reasonable to assume that 350 miles of additional aqueduct could be added in a later stage to bring from 7 to 10 million acre-feet of water from the Hells Canyon Reservoir into the Klamath River at elevation about 1,600 feet or less as gravity flow.

"Physical data, major structures

Gross storage, Ah Pah Dam	acre-feet	15, 250, 000
Live storage, Ah Pah Dam	do	9, 050, 000
Height, Ah Pah Dam	feet	813
Total length of main and branch aqueduct	miles	1, 463
Total length of tunnels	do	222
Total length of main aqueduct	do	605

"Construction costs[1 2]

Ah Pah Dam and afterbay	$605, 531, 000
Regulatory dams and reservoirs	126, 112, 000
Aqueducts and tunnels	1, 541, 346, 000
Irrigation distribution systems	672, 479, 000
Pumping plants	145, 435, 000
Generating stations and transmission	188, 418, 000
Miscellaneous	13, 729, 000
Total	3, 293, 050, 000

"Benefits and costs[1]

Total annual equivalent benefits	$170, 000, 000
Total annual equivalent costs	89, 000, 000
Ratio of benefits to costs	1.9 to 1
Costs per acre-foot to amortize all capitalized (and annual) costs with 2½ percent interest in accordance with the time and quantity of scheduled water delivery	$25"

"[1] Pursuant to existing law and regulation, benefits are based on 1939–44 average price level; costs are based on current construction cost level.
"[2] Simple addition of estimated cost."

Since the original northern California diversion would make an annual delivery of approximately 6 million acre-feet of additional water into the Sacramento River, the construction of 350 miles more of aqueduct to deliver 6 to 10 million acre-feet of water would seem, on an incremental basis, to be entirely reasonable.

As I say, I have no knowledge that this is the plan. However, viewed in the light of the unsoundness of high-head Hells Canyon project as a component of the power development of the Pacific Northwest and the fact that Mr. Michael W. Strauss participated in the original planning for both the high-head Hells Canyon project and in the United Western investigation, I am lead to the conclusion that this is indeed a possibility.

The attached tabulation shows that the total investment in this northern California diversion project is $3,293 million and that the total annual cost is only $89 million, or 2.7 percent of investment. Three hundred and fifty miles of aqueduct is a minor element of such a program.

The diverting of 10 million acre-feet of water from the Hells Canyon Reservoir would, of course, have a major effect upon the power potential of the Snake River. This diversion would be equivalent to a loss of nearly 17 billion kilowatt-hours which would be generated by the flow of this 10 million acre-feet from the Hells Canyon Reservoir through the fully developed head between this project and the Bonneville project tailwater. This is more than the annual output of the Grand Coulee project. To compensate for this loss, approximately 27 million barrels of oil would have to be burned each year, which at the present price level is equivalent to $60 million a year.

I believe, as I have heretofore said, that the building of a high-head storage project in Hells Canyon is unwise and the money that would be spent on this project would be a monument to governmental error. That same money can be spent much more advantageously at a number of other fine sites.

Thank you for the opportunity of appearing before the committee.

Senator NEUBERGER. Would you mind submitting to some questions? If some of the members of the committee would like to ask some questions.

Senator DWORSHAK. Mr. Chairman, I should like a clarification of the procedure at this point. Two days of hearing held already in Idaho and Washing-

ton and we have scrupulously refrained from any cross-examination because it was pointed out by Chairman Murray and by members of the committee that because of the large number of witnesses appearing to testify it would be impossible to hear them adequately if we did utilize much of the time for cross-examination. Now you propose to ask questions. I have no particular objection except that I think you should set up some program which would be equitable for members of the committee and if there are to be any limitations I think we should recognize them at this time for otherwise we might become embroiled in the ramification of cross-examination requiring a hearing of 2 or 3 or 4 days' duration.

Senator NEUBERGER. Let me just say this Senator Dworshak, as I recall at Pasco the first question asked of any witness you asked yourself of Mr. McCutcheon, representative from the Washington Legislature, am I not correct in that?

Senator DWORSHAK. Yes; that was about three words to clarify whether certain resolutions had been adopted by both houses or one house, and I wanted the record to show. I don't know what the facts were and I thought to clarify the testimony. It was not in the spirit of cross-examination, merely to make the record very clear.

Senator NEUBERGER. Well, I just assumed that it was within the authority of the committee to ask questions when any member saw fit. In view of that, at noon yesterday at Pasco I asked if the chairman would give his feelings in this manner. If any members of the committee wish to ask questions and the chief clerk, who was present when I spoke to Senator Murray, will, I think, corroborate the fact that the chairman of the committee told me at that time that if any members of the committee wish to question any witnesses during the remainder of the hearing at Pasco or during this hearing at Portland, it was certainly the desire of the chairman that they do so.

Senator DWORSHAK. Mr. Chairman, I have no desire to interpose any objections, I reiterate, but merely to set up a procedure, which would be considered fair to all members as applied equitably to all witnesses. I am interposing no objection.

Senator NEUBERGER. It will be, of course, if anybody is questioned, everybody will be open to questioning by any member of the committee. For the record I would like to ask Mr. Callahan, the chief clerk of the committee, if I have not reported correctly my conversation with the chairman of the committee.

Mr. CALLAHAN. That was my understanding of the conversation Senator, yes.

Senator NEUBERGER. Thank you very much, Senator Dworshak, it is also my intention that if any questions are asked you will have the first opportunity to do so as the senior member of the committee here. So would you like to ask any questions of the Governor of the State of Washington?

Senator DWORSHAK. Not at this time.

Senator NEUBERGER. Senator Morse, have you any questions you would like to ask?

Senator MORSE. Mr. Chairman, I an an ex officio member of this committee and do not have voting privileges on it. I only have this comment on it. The chairman is certainly within his rights to follow any procedure he wants and ask whatever questions he wants. I would respectfully point out that our purpose is to try to get the opinions of as many witnesses as we can. I imagine the chairman and I will be discussing this matter at the crossroads of Oregon for some months to come, and I am fearful that if we start a cross-examination of the Governor and other witnesses we are going to hear very few witnesses because once cross-examination starts I don't see any end to it, but I am going to respect the chairman's wishes in this matter. He is the chairman and he has the right to examine these witnesses. I, myself, feel that what we ought to do is to hear as any witnesses as possible and make a record here of formal statements. I am going to ask permission later on in the day to make a short 10-minute statement as a witness. Not being a voting member of this committee, I would like to have the privilege of giving some testimony as a witness. In that testimony I shall make some observations on some of the arguments made by the distinguished Governor from our neighboring State of Washington. But please do not interpret my remarks as an objection to cross-examination, but only to point out to the chairman that I think if you walked down this road of cross-examination you will probably be hearing just about as many witnesses during the day as you have fingers on your hands, instead of the 30 or 40 witnesses that I wish we could hear.

Senator NEUBERGER. I would just like to ask this of the Senator. If you do, of course, appear as a witness yourself you will be open to questioning by Senator Dworshak and myself.

Senator MORSE. We will waive all rules at that time.

Representative SISK. I would like at this time, as a representative of central California and in view of the fact that the distinguished Governor of Washington has injected a completely new thought, we would like for the record to show exception on my part and ask unanimous consent of the committee to make a statement for the record to show the actual facts surrounding the report which he mentioned in his statement.

Senator NEUBERGER. Thank you very much.

Senator MORSE. I think the Congressman certainly should have the same privilege that I have asked for later today or at his pleasure to testify as a witness in this hearing.

Senator NEUBERGER. Would you care to do that later in the day?

Representative SISK. Yes.

Senator NEUBERGER. Thank you very much, Congressman Sisk. Is there any other comment from the other members of the committee. Mrs. Pfost, Mr. Metcalf, Mrs. Green. I would just like to add one question, if I can, Governor. It is obvious that in your statement you have placed a good deal of reliance on some of the statistical data from some of the private power companies that have been submitted either to you or to the interagency committee or to the Hells Canyon hearings before the Federal Power Commission. I would just like to ask one question. Are you familiar with the 1946 reports submitted to the National Resources Development Committee of the State of Washington by 5 private power companies predicting that if no future capacity was added to the Pacific Northwest hydroelectric pool there still would be a surplus in 1955 of 780,000 kilowatts.

Governor LANGLIE. Well, now, in the first place your original assumption is in error. We get our figures in the State of Washington from our own staff people. Ever since I have been a member of the Columbia Basin Interagency Committee I have felt that as a responsible member of that committee I have the duty to try and check the technical decisions that were being made by the Bureau of Reclamation, Army engineers, and other Federal agencies to be sure that they were doing—were being done in the interests of the people of the State. For that reason I have had one man, an experienced engineer, who does no other work except to carry on continuously the studies in connection with the Columbia River development, because it means so much to our State and to the Northwest and the information that we have developed in our files is not anybody's information, it is our own. We have have reviewed all reports, all studies, and we have tried to ascertain the facts about streamflow, flood conditions, power loads, distribution of that load and the long-range development of the system with the idea of getting the lowest cost power for the people of the State and the Northwest and developing the maximum resources of the river. Now those are figures that we have developed and we are not taking part in any private program. We think that the people of Idaho and the Federal Government have the responsibility of making the decisions as to how they want to develop their power. In some areas of the State of Washington we have private power, in other areas we have public power and we have taken the position that it is up to the people in those areas to decide how they want to be served. And it is on that basis that we have made our studies, but we are concerned with power projects being installed that are totally uneconomic, that involve tremendous amounts of money, that we the people of the Northwest have to pay back with interest and when we see a project come along that is uneconomic, that involves tremendous investment of capital, that makes interest payments for years to come and will add from 10 to 14 million dollars a year to the power costs of the people of the Northwest, then we have opposed it. We are not concerned who builds them.

Senator NEUBERGER. I am afraid, Governor, you still have not answered my question. I will make it more explicit. With respect to the figures that you used for the cost of the proposed company dams on the Snake River, are those the figures that were submitted to the Federal Power Commission by the Idaho Power Co.?

Governor LANGLIE. Partly.

Senator NEUBERGER. That was what I was trying to ask.

Governor LANGLIE. I thought you were talking about a report that was submitted to the State of Washington.

Senator NEUBERGER. Now I'll ask you about the reports submitted to the State of Washington. I wanted to know about a report submitted to the State of Washington on January 4, 1946, by six operating private power companies in the Northwest. One of them headed by the man who is now president of the Idaho Power Co., and that this report predicted, and I'll be glad to pass it over to you, that if there were no future projects added as then existed in 1946 that there still would be an annual surplus of 780,000 kilowatts in the Pacific Northwest by 1950.

Governor LANGLIE. I am not familiar with that report. I wouldn't go along with it if I was. I support no report that is in error whether it is made by a bureau of the Federal Government or by some private company.

Senator NEUBERGER. That is all I wanted to know as far as my questions are concerned.

Senator DWORSHAK. No questions.

Senator NEUBERGER. Thank you very much Governor.

STATEMENT OF HON. PAUL PATTERSON, GOVERNOR OF OREGON

Governor PATTERSON. Mr. Chairman, ladies, and gentlemen of the committee, one of the most important problems facing Oregon and the Pacific Northwest today is that of power development to meet the rapid growth of this area in population, industry, agriculture, and commerce. I welcome the opportunity to appear before you and present our views on this subject, which is of such vital concern to our regional economy.

The Northwest Governors' Engineering Committee consisting of engineers from the Reclamation Service, the Army, Bonneville, all of the local public generating agencies as well as the private companies in this area, agree that this region will need 6,400,000 kilowatts of power between now and 1964. To satisfy this power need will require an investment of approximately $200 million per year, a total of $2 billion by 1965. I am certain that you recognize that the people of our great Northwest region are virtually unanimous in their desire to further the development of the Columbia River and its tributaries. We differ as to the methods to be used to achieve that development, but we stand shoulder to shoulder as we face the ultimate goal—the comprehensive harnessing of this tremendous river system for the maximum good of the people in this region and the economy of these United States. I preface my remarks with this explanation of our unanimity of purpose because I want this committee to understand clearly that I will support any development of the Columbia River system so long as it meets certain criteria which to me are necessary.

First, I believe that all steps taken should be made and taken with full knowledge and with a view toward meeting the immediate and imperative need that we have in this area for power, now. Within the last month we have had to curtail certain industrial users of interruptible power because of a temporary shortage we are experiencing on this the very threshold of the next 10-year period.

Second, I believe that all projects constructed in this system must be considered in the light of the comprehensive development of the entire basin's water resources. It is my conviction that no project should be considered independent of the other, including those now in operation and those contemplated for future construction.

Third, I believe the benefits of these projects should be made available to the greatest possible number of people in the basin area. It is this philosophy that has guided the Columbia Basin development up to this point and which has resulted in the organization and successful operation of that unique and mutual-aid organization of power distributors known as the Northwest power pool.

I am opposed to Senate bill 1333 and its companion measure in the House of Representatives because I believe they fail to meet these criteria. Let it be understood, however, that I am not opposed to the development of the Hells Canyon reach of the Snake River. I believe that this part of the Columbia River system must be developed if we are to realize the maximum benefit from the basin's falling water. My principal disagreements, however, with this particular bill to authorize Federal construction of the high dam are these:

First, there is no provision or no assurance that, if authorized, the dam would be constructed. This bill contains within itself a provision for a study to be

made and a report returned to the 85th Congress, thus postponing further action for at least a year. We need power and we need it now.

Second, I believe this proposal to be out of place in the logical timetable for Columbia Basin development. There are other projects more urgently needed.

Third, this bill would authorize Federal development of a single dam on the Snake River in the middle of the unresolved controversy of whether a single dam or a multiple-dam development is better for utilizing the potential of the Hells Canyon reach.

Fourth, this bill would reserve the bulk of the project's power production to a small segment of the Northwest, leaving Oregon, which shares equally that stretch of the river with Idaho, with an inequitably small share of the electric power to be produced at the project.

Fifth, I object to the bill's provision which would divert some of the project's power revenues into the development of the Payette unit of the Mountain Home reclamation project. It is completely unrealistic to tie the Hells Canyon project to the Mountain Home project far upstream. There is no practical physical connection between the two. It would be as logical to divert revenues from Bonneville Dam's production for the Mountain Home development. This same water that would race through the turbines of Hells Canyon power dam also would turn the generators at John Day, the Dalles, or Bonneville. The Hells Canyon-Mountain Home relationship falls far short of paralleling that at Grand Coulee Dam where the impounded waters actually are used to irrigate arid lands below the dam site. The reclamation portion of the Mountain Home development is to cost substantially $200 million and improve 190,000 acres. This is at a cost of $1,040 per acre. Only $22 million of this is to be repaid by the landowners. The balance must be paid by the power users in the Northwest area.

I would be derelict in my duty as chief executive of the State of Oregon if I did not register my strongest possible protest to the inequity to Oregon if this bill were to become law. Oregon is a major geographical segment of the Columbia River Basin, but because of our geographical position in the basin we have fewer hydroelectric power sites within our borders than do our neighboring basin States. Oregon's most desirable potential power sites are those on the Columbia and Snake Rivers and every one of them we must share with a neighboring State. For that reason, we must fight to guard our share of the power production. It is virtually all that we have.

Thus it is plain that we in Oregon must oppose any reservation of power from the Hells Canyon development for the middle and upper Snake River Basin, only a small portion of which lies in Oregon, and that we must also oppose using the revenues of this project to develop a reclamation project in our neighboring State.

I stress my objection to the failure of this new Hells Canyon development proposal to fit into any logical Federal development timetable. I believe it is particularly significant that the people of Oregon, through their elected representatives in the 48th legislative assembly now in session at Salem, have not asked the Congress to authorize Hells Canyon for Federal construction, but most emphatically have requested immediate action on the John Day lock and dam project, which lies on the mainstem of the Columbia River between Oregon and Washington some 217 miles upstream from the river's mouth.

In my inaugural message 3 months ago, I asked the Legislative Assembly of Oregon to adopt the strongest possible memorials to Congress and the executive branch urging the Federal Government to reaffirm its acceptance of certain responsibilities for Columbia Basin development. I am gratified that the legislature supported my views and implemented my request by adopting two memorials. Thus, the people of Oregon, through their legislature, have invited the Congress to focus its attention on three projects now under construction by the Federal Government—Chief Joseph, McNary, and the Dalles Dam—and to act immediately on one of two alternatives for expediting development of the John Day site. The first alternative asked is full development with Federal moneys. The second asks that Congress authorize local participation in the development, if it does not see fit to appropriate the estimated $320 million necesary to construct the dam itself.

In fairness, I must point out that there was some opposition in the Oregon Legislature to the John Day Memorial, but the dissent came primarily from those who actively have opposed the so-called partnership development. The John Day Memorial, which the legislature adopted and which is now before the Congress, was introduced in the Oregon House of Representatives on January 11, the

second day of the session. Two days later, some of its most vocal opponents introduced a similar memorial which in almost identical terms asked the Congress to build the John Day with Federal funds alone. It proposed no partnership alternative. That memorial was tabled in committee and the legislature adopted that which spelled out alternative financing methods for the John Day project.

The most significant thing, however, is that at this late date in the 87th day of our legislative assembly when the time for introducing new matters has long since passed, that there has been no move by any State legislator to ask the Congress to expedite action on the Hells Canyon development. Some members of the legislature have identified themselves prominently with the movement supporting the high Federal dam at Hells Canyon, but none of these lawmakers have asked the legislature to memorialize Congress for its immediate construction.

Thus it appears that the people of my State, through their representatives in the legislature, have declared that their immediate interest lies in the completion of Chief Joseph, McNary, and the Dalles Dams on schedule, and the posthaste construction of the John Day lock and dam project. The selection by Congress of the John Day project as the "new start" in the Columbia Basin development I believe would be a sound step. We are faced with the absolute necessity of adding some 600,000 kilowatts to our power capacity every year if we are to meet our increasing load demands. The Federal Government has assumed responsibility for a substantial part of that development, particularly in regard to the three Federal dams now under construction. I hope they can be kept on schedule and that you will recognize the importance of the John Day project in the scheme of the Columbia Basin development and act to further its construction as quickly as possible.

If it is cost that you are interested in, let us consider the fact that the Hells Canyon high dam would cost an estimated $473 million, including the cost of transmission facilities. That dam would have an installed generating capacity of 800 kilowatts with an ultimate capacity of 900,000 kilowatts, plus a downstream power benefit estimated at about 200,000 kilowatts when all of the dams to be constructed on the lower stem are completed. The John Day Dam, on the other hand, would cost about $320 million and would have an installed initial capacity of 1,105,000 kilowatts, with a potential additional rated capacity of 425,000 kilowatts when the upstream storage facilities are completed. Furthermore, the John Day project's desirability is heightened by its proximity to the great industrial load centers of the Northwest. The cost of transmitting its power production to the places where it is needed most urgently would be relatively low.

If it is flood control which is paramount in the committee's consideration, then I would call your attention to the fact that the difference in the cost of the Hells Canyon Dam and the John Day Dam would go a long way toward building the dams on the Clearwater and Salmon Rivers, which contribute more than 80 percent of the Snake River's floodwaters in the Columbia; and that the Hells Canyon high dam would have no effect whatever on the spring runoff from the Clearwater and the Salmon.

There is another element of the proposed John Day project which is of vital importance to Oregon and Washington, and to which the Hells Canyon project would make almost no contribution. That is the valuable addition John Day would make to the region's transportation facilities.

The John Day lock and dam is the last remaining link in the Columbia's mainstem navigation system. Its completion, in effect, will put Washington's inland empire and the great cereal and livestock producing region of eastern Oregon on the seacoast. By providing a pool of navigable slack water approximately 70 miles long, it will complete an avenue of water commerce from the Pacific coast to Pasco, Wash., some 335 miles inland. The value of extending this broad water avenue to help tap the agricultural and industrial potential of the inland region is apparent. It is sorely needed to speed the region's development.

If the Congress feels that it cannot reasonably undertake such a huge expenditure of Federal funds for the John Day project at this time, another avenue is open for consideration. Several local agencies already have pledged to put some $284 million in cash and installments, toward John Day's construction as a repayment for its power production. Under that proposal, the Federal Government would pay only approximately $36 million for nonreimbursable benefits such as navigation and flood control and, most important, would retain complete ownership and control of the project.

Lastly, let me again emphasize that in my opinion the Congress would be acting with ill-considered haste if it were to pass a Hells Canyon Federal authorization bill before the Federal Power Commission's findings are announced.

This has consistently been my position since the inception of these hearings. The Commission for over 2 years has been collecting and evaluating facts concerning two proposed schemes of development of this portion of the Snake River. It has held exhaustive hearings on the proposal. Its findings are expected to be announced shortly. Certainly it would be unwise to ignore completely the conclusion of this Federal agency which has been charged specifically by Congress with responsibility for evaluating such proposed developments. This committee, in my opinion, should review the Commission's reports carefully before it acts on this proposed legislation.

In conclusion I wish to express my appreciation and those of the people of the State of Oregon to this committee for the interest you have shown and are showing in our major regional development problem. We realize we are the primary beneficiaries of whatever river projects are built. We deeply appreciate what the Federal Government has done through the years for us and is now doing in this most important field of developing our hydroelectric power resources. Responsible citizens of this great Northwest region are striving mightily that we might help solve our own problems with as little Federal aid as possible, but we know the magnitude of the task before us is such that without question we will need the active help and support of the Federal Government. Many of our local power agencies, both privately and publicly owned, have offered to help share the financial burden of this multi-billion-dollar basis development. We in the Northwest want to do our share and we intend to offer whatever energies and financial resources we can muster to help keep hydroelectric resource development abreast of our rapidly expanding needs.

Senator NEUBERGER. Thank you, Governor. Senator Dworshak, would you like to ask any questions?

Senator DWORSHAK. No questions, thank you.

Senator NEUBERGER. Senator Morse?

Senator MORSE. No questions now.

Senator NEUBERGER. Any questions from the Members of the House? Governor, if you don't mind, I would like to ask you several questions if I may. You made reference to the fact that you thought it was improper for Senate bill 1333 to allocate Hells Canyon power revenues to the Mountain Home irrigation project because there was no logical or physical connection. Am I correct in that?

Governor PATTERSON. That is correct.

Senator NEUBERGER. One of my files in the Senate Office Building is packed with letters from people in central Oregon requesting that the Crooked River irrigation project and other irrigation projects in central Oregon be partially financed with revenue from the Dalles Dam which has no connection with them. Would you be opposed to that?

Governor PATTERSON. I would be of the same opinion. I believe that the revenues from these power dams should be considered and handled as a separate item. I think logically they should go into the general fund of the United States and then if the Congress desires to subsidize, and that is what it is, these reclamation projects, we should do it openly and intelligently and vote the money out of our Treasury in the usual manner. Secondly, I feel that if we are going to pledge the revenues from these power dams to anything we should pledge them to the development of more power dams in the Northwest.

Senator NEUBERGER. You mentioned in your presentation that the members of the Oregon Legislature were most in favor, or heartily in favor, of the completion of McNary and the Dalles on schedule and undertaking of John Day Dam. Do you think the power that could be increased in production at those dams by the release of storage from Hells Canyon would be important or not in that production?

Governor PATTERSON. I think the cost of impounding that water in the middle reaches of the Snake River far outweighs and exceeds any added generation. It would be McNary, John Day, if built, the Dalles, and Bonneville. Those are the only 4 and if we are going to spend money to impound water to up the generation of the 4 dams that I mentioned we can get far more water and far more generation from storing the water in the Clearwater or the Salmon which represents 80 percent of the flow of the Snake River and lie, both of them, below the location of the Hells Canyon Dam.

Senator NEUBERGER. Would you favor impounding water in the Salmon River?

Governor PATTERSON. The Salmon River at this time is faced with difficulties of the wildlife or specifically the fish production. We are spending every energy

that we can and have in trying to solve those problems. But in the upper reaches of the Clearwater my information is that the fish problem is not serious, therefore, I would recommend starting with the Clearwater Dam, which is the larger of the two and building our holding dams there with the hope and thought that by the time, when the time comes for us to build on the Snake, we will have solved this difficult problem of preserving our fish.

Senator NEUBERGER. I wanted to ask you, if I may, a couple of other questions. With reference to John Day, are you aware of the fact that the administration budget for the coming fiscal year does not contain what the Army engineers regard as sufficient funds for a full year's planning on John Day?

Governor PATTERSON. I am not advised as to what the Army engineers consider sufficient funds for a full year's planning. I am advised that there is in the President's budget for the coming years some, and I am speaking off the record and without preparation, I believe it is some $500,000 for initial planning upon this dam. I am also advised that there is an effort being made to get money from other projects which have been unexpended within this current year. In order that those funds can be made available for the examination of the John Day project during the coming summer season so that we may be ready to conduct our engineering experiments which must be done largely in the winter months when the river is low.

Senator NEUBERGER. You are aware, I think, are you not, that the senior Senator and Mrs. Green and myself have asked that additional funds be included in the budget for John Day?

Governor PATTERSON. I am sorry, I was not until this moment.

Senator NEUBERGER. We have and have done so quite a long time ago. I would like to ask this, Governor, you referred to the importance of these projects to the State of Oregon, their benefits to Oregon, I think you are aware of the fact that the administration has given a high priority to the construction of the Libby Dam in Montana. Do you regard that as of importance to the State of Oregon?

Governor PATTERSON. Originally the Northwest Governor's Power Policy Committee approved the Libby Dam as the No. 1 project that should be built at this time. However, we have run into something that is outside of our control in that Canada is conducting a series of studies on the waters of their portion of the upper Kootenai River, which is the river that is dammed by Libby and also studies into the upper Columbia that lies in Canada. Therefore, they have said to us that they are unwilling to go forward with any negotiations on the storage of water in Canada and Libby, by the way would back, as you know, water far into Canada. They are unwilling to go forward on any negotiations on that for a period of 2 years. Therefore, the Northwest needing power and needing power now, I think we have to rearrange our thinking on Libby Dam until we can come to an agreement with our neighbors as to the storage of water.

Senator NEUBERGER. Thank you very much, Governor, unless Senator Dworshak has any questions. We now will resume.

STATEMENT OF HON. ROBERT E. SMYLIE, GOVERNOR OF IDAHO

Governor SMYLIE. Mr. Chairman, gentlemen of the committee, distinguished guests, as Governor of Idaho I desire to utilize this opportunity first to welcome the members of your committee and the other Senators and Congressmen to our State. I hope in the course of your brief visit here that you will sense some of of the ferment and driving vigor of the people and economy of this intermountain country.

I shall hurry on this morning for two reasons. First I desire that no one deprive you of the opportunityto hear the voice of the people of the Snake River Basin. Secondly, notification of your hearing came to me late last Friday afternoon and preparation of a searching technical paper on the proposal which you consider was a virtual impossibility. Only by changing my schedule do I find it possible to be here at all.

Each time I cross the Snake River Basin I become ever more proud to be a resident of a land that was made to blossom by the toil and sweat and vision of our forefathers.

These men were pioneers who built an empire with water—nothing else; water, not from boundless clouds, but from this river flowing through a semiarid land. Without this river water there would be only dry barren soil of almost no consequence. There would hardly be communities of people.

They left forever the marks of empire in the dams they built and the canals they dug to move that precious water onto land that needed only a drink to make it almost the most productive land in the world.

It was here in southern Idaho that irrigation reached an early peak and showed the way for the reclamation of other lands throughout the arid West.

This existing empire was built and achieved by the private doings of men acting individually and in concert.

In these waters that arise in the snowfields of the Rockies lie the course of an ever greater empire; an empire of new land greening in the sun; of hydroelectric power to breed industries and to process the wealth of our forests and our mines; an empire to attract people to a new land of opportunity.

We are seeking—we always have been and we always will—the ways and means of developing, comprehensively, every drop of water that tumbles from the snow packs of the Snake River watershed. And when we have used that water, whether to help grow a potato or to turn a turbine, or both, then, and only then, will we willingly send it flowing into the canyons below Weiser to help develop still another empire farther west.

We shall not be selfish with our water, we shall always insist that the comprehensive development of the Snake River be logical, be orderly, and in the best interests of Idaho. We earnestly desire an end to strife over these waters. All of the windy controversy that has swirled around the proposal now before your committee has generated no kilowatts of power. What the Northwest needs is kilowatts and not conversation.

And in Idaho we tire of the efforts of outsiders to foist upon us plans of development which have as the primary objective the interest of those outside this State rather than the best interests of Idaho and the Northwest as a whole. First and foremost we desire to retain and develop Idaho resources for Idaho. And we shall insist always that we do with Idaho water what is best for Idaho first.

I frankly have grave doubt that the proposal now before the committee is seriously tendered. If that doubt has any basis in fact then the proposal is just a little tragic. It reopens in a nontechnical forum a question now duly submitted for decision to the experts designated by the Congress to determine these technical questions. Those who desire quick development of the Northwest would do better to prod the experts on the Federal Power Commission to a decision that is long overdue. A decision incidentally that will necessarily as a matter of law resolve the technical questions which this proposal once again tenders for political rather than technical discussion.

The proposal is not new. It has been under discussion for upward of 15 years. If we had been building while this project has been argued we would have substantial blocks of power on the line and available for use. Kilowatts of power would have replaced conversation and Idaho and the Northwest would have moved ahead.

A partnership plan of development is not new in this State. The great bulk of our irrigation projects were originally constructed in that fashion. Individuals, groups, and companies spent their own time and effort in building dams, canals, and other irrigation works. When later, the combination of a higher degree of cultivation and occasional drought years required supplemental water from large storage dams, these, in their turn, were constructed with Federal funds. Today our irrigation empire of 2,500,000 acres is a complex combination of canals and primary water rights developed by private funds, plus the overlying supplemental water supply derived from federally constructed dams.

Many of our great storage structures were partnership affairs. Jackson Lake, lying in Wyoming but serving Idaho lands, was built approximately one-half by Federal funds and one-half by private funds, paid to the Government in cash by our own people as construction progressed. Approximately one-half of the cost of great American Falls Dam was paid in cash in advance to the Government by non-Federal canal companies and irrigation districts before construction began.

We know that such a procedure reduces the intolerable burden of public debt upon our people. We know that such enterprises become a part of our tax base, and are integral parts of our taxpaying community. We know that such enterprises are subject to our Constitution and laws, and the control of our legislative and regulatory bodies. We have found them good citizens. We see no reason to shy away from future private-enterprise development of undeveloped water resources in this State.

We have flood-control problems in Idaho, upon the upper reaches of practically all of our streams. Damages amounting to many tens of thousands of dollars frequently occur. We are also sympathetically aware of flood-control problems on the lower reaches of the Columbia River. We know that dollars spent for flood-control storage on the upper reaches of our streams, at points where they will protect our Idaho lands, serve the dual purpose of protecting us in Idaho and likewise our friends on the lower Columbia. Likewise, we know that if we neglect these upstream sites and spent our dollars at points where they protect only the lower Columbia, and totally ignore the danger areas upstream, we are indulging in inefficient planning.

Also, it is obvious to all that the proper place for flood-control construction is on those streams where the greatest floods occur. All of the authorities are agreed that the Clearwater River in Idaho is the greatest flooder in the American reaches of the Columbia River system.

I urge that instead of indulging in the strife and controversy which has, in the past, and will necessarily, in the future, continue, if attempts are made to provide flood control and excess storage capacity on the Snake River above the mouth of the Salmon, that steps be taken immediately to authorize and appropriate for the construction of a large structure on the Clearwater River. There we will get dual-purpose flood control. There also we will get the maximum amount of additional storage water said to be required by certain downstream powerplants. Such procedure will bring an end to strife and controversy, and forward the speedy development of our resources for the benefit of all.

And the provision of storage on the Clearwater will make the dream of slackwater navigation to our potential seaport town of Lewiston, where you will spend the afternoon, an immediate and imposingly beneficial proposal.

I would also be remiss in my duties as chief executive if I did not state clearly, and without equivocation, that Idaho must always insist that every dollar of Federal money available for our State be used in constructing those upstream projects which will facilitate the use and reuse of our waters within our boundaries before they pass irrevocably for use in the downstream States. Water is Idaho's prime asset in the competing economics of the Northwest. Stored in the upper reaches, these waters will give the dual flood-control advantage heretofore mentioned, will be available for use and reuse in irrigation as they pass through the several hundred miles of our Idaho Snake River Basin. They will be available for use in hydroelectric production at all of the projects throughout the length of the Snake River, as well as those further downstream on the Columbia. In short, their storage at these upper points will inevitably result in the comprehensive development of the river. The only way to get comprehensive development is by upstream storage. It cannot be satisfactorily achieved by storage in the middle reaches of the stream. Well realizing that there are more proposed projects in the Columbia River Basin than there will be available funds for many years, and that we are necessarily in competition for those funds, we must insist that such funds as may be available to this State be used for upstream storage development. In no other way can our competitive interests be adequately served.

We know that the logical stream development is from the headwaters downstream. We, Idahoans, were the first to put the headwaters to beneficial consumptive use and we demand that our right to these headwaters for beneficial consumptive use remain inviolate.

There is land yet to reclaim; land which some day must be used to feed the Nation's rapidly increasing population. We hope to build dams in Idaho for the benefit of Idaho; dams to circumvent floods on the plains of the mighty Snake; dams to store water for irrigation of more and more land; dams whose impounded water might be used to recharge the underground flow now serving the pump irrigators of central Idaho.

I could burden you at length with a recitation of this problem, but you must hurry on. Briefly, what I want for Idaho from Snake River can be summed up in this fashion:

First. Our existing agricultural water rights must have ironclad protection.

Second. Our right to later overriding appropriation of the water that rises on Idaho watersheds for beneficial agricultural consumptive use must never be drawn in question.

Third. In the field of hydroelectric generation of power I want immediate development of these resources, under plans that are irrevocably consistent with my first two stated objectives.

The proposal now before your committee does not meet those requirements and I therefore urge you to reject it swiftly and certainly.

Let me hasten to say to you that I make no claim in this matter to speak for a unanimous people. You will hear from them. But let me also say as Governor of Idaho that it is my firm belief that at least 75 percent of my people agree with what I have told you.

I thank you warmly for your courteous attention, and with your leave I shall leave a copy of this statement with your reporter.

Mr. ASPINALL. Is there any objection to the report of the Department being made a part of the record?

Hearing none it is so ordered.

(The report referred to follows:)

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 13, 1955.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

MY DEAR MR. ENGLE: This is in response to your request for an expression of the views of this Department on H. R. 4719, a bill to authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes.

Briefly stated, H. R. 4719 would authorize the construction of a high dam and associated powerplant in the Hells Canyon reach of the Snake River along the boundary between Idaho and Oregon, and would also authorize the construction of certain smaller hydroelectric facilities at Scriver Creek in west central Idaho. In addition, H. R. 4719 would provide a framework for using power revenues from these works as a means for returning part of the costs of future irrigation developments, including Mountain Home, in the central and upper Snake River Basin, if and when such developments were authorized by the Congress. However, H. R. 4719 would not, in and of itself, authorize the construction of any irrigation works for the Mountain Home area or any other area. It is also pertinent to observe that the Hells Canyon Dam contemplated by H. R. 4719 would not deliver water to, or otherwise serve as a physical part of, the proposed Mountain Home development or any other irrigation development.

We are firmly convinced that where a non-Federal proposal can provide results which, in terms of comprehensive development, are reasonably comparable with those anticipated from a Federal project, the people of the region should be encouraged to utilize, in every proper way, the available capacities of public or private organizations for doing the job on a non-Federal basis under conditions fully protecting the public interest. By such a course of action, soundly conceived and vigorously pursued, the realization of the benefits of regional development will be speeded up, and, at the same time, the ability of the Nation as a whole to accomplish the ultimate goal will be enhanced. This is because the Federal Government will thereby be enabled to devote more of its available energies and expenditures toward the realization of elements in the total plan that are clearly beyond the practical capabilities of the States and other non-Federal organizations.

These premises were succinctly stated by the President in his state of the Union message to the Congress of January 6, 1955. The President then said, "* * * the Nation must adhere to three fundamental policies: First, to develop, wisely use, and to conserve basic resources from generation to generation; second, to follow the historic pattern of developing these resources primarily by private citizens under fair provisions of law, including restraints for proper conservation; and, third, to treat resource development as a partnership undertaking—a partnership in which the participation of private citizens and State and local governments is as necessary as is Federal participation." The President also said that the Federal Government must shoulder its own partnership obligations by undertaking projects of such complexity and size that their success requires Federal development.

The Federal Power Commission now has under active consideration applications for licenses to develop this stretch of the Snake River by a private corporation. The Commission is considering these applications under the provisions of the Federal Power Act as amended and reenacted by the Congress in 1935.

The act provides, through the Federal Power Commission, a congressionally established machinery to determine whether proposals for non-Federal development adhere, or can be adapted to adhere, to principles of sound conservation and wise use of our basic water resources.

When an application has been filed with the Commission for a license to undertake development of resources which the Congress has not reserved for Federal undertaking, the Commission, as a prerequisite to issuing a license, is under a congressionally established mandate to determine, among other things, that such project is or can be made best adapted for the development, conservation, and utilization, in the public interest, of the water resources of the region in accordance with a comprehehensive plan for the development of those resources. This is clearly established by section 10 (a) of the Federal Power Act as reenacted by the Cohgress in 1935. The Commission, before it issues a license, must be satisfied that the proposed development for which application has been made meets that test, and it is empowered and obligated to require whatever modifications may be necessary to meet these criteria.

On the other hand, the Congress requires, by the act as originally passed and as repassed in 1935, that whenever the Commission finds that the development of water resources for public purposes should be undertaken by the United States itself, applications be not approved and that the Commission's findings and appropriate recommendations be submitted to the Congress (Federal Power Act, sec. 7 (b)).

The Supreme Court has said of the statutes establishing the Federal Power Commission, "These enactments expressed general policies and granted broad administrative and investigative power, making the Commission the permanent disinterested expert agency of Congress to carry out these policies" *Chapman* v. *Federal Power Commission* (345 U. S. 153, 168 (1953)).

Extensive hearings on the pending applications have been held and the Commission, having received its examiner's report, now has the matter under advisement. This Department has made available to the Commission all of the information, reports, memorandums, and testimony of engineers and other witnesses that have been requested by the Commission.

The congressionally established machinery for making the determinations mentioned above is in motion, being, in fact, in the midst of the process. Under these circumstances, the issue should not be determined in advance and in derogation of the very process the Congress has established, and we recommend, therefore, that action by the committee be deferred until the Federal Power Commission has acted upon the applications now before it.

As a step in bringing out all the facts relating to the irrigation potentials of the Mountain Home area, such as various possible means of providing water, selection of lands for initial development, costs, benefits, sources of financial asistance, and all other facets of the problem, the Department is making the necessary investigations, within the limits of available funds, and plans to report thereon to the President and the Congress as soon as practicable.

The Bureau of the Budget has advised that there is no objection to the presentation of this report to your committee.

Sincerely yours,

FRED G. AANDAHL,
Assistant Secretary of the Interior.

Mr. ASPINALL. The Chair would like to inquire of Mr. Budge off the record.

(Discusion off the record.)

Mr. ASPINALL. Mr. Budge.

Mr. BUDGE. I have one further unanimous consent request.

During the hearings on yesterday and Monday the report of the Department of the Interior addressed to the chairman of the Senate committee was referred to in several instances, and I ask unanimous consent that report, signed by the Secretary, be made a part of the record following the statement presented to this committee.

Mr. ASPINALL. Without objection, it is so ordered.

(The Senate report from the Department is as follows:)

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 2, 1955.

Hon. JAMES E. MURRAY,
Chairman, Committee on Interior and Insular Affairs,
United States Senate, Washington, D. C.

MY DEAR SENATOR MURRAY: This is in response to your request for an expression of the views of this Department on S. 1333, a bill "to authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes."

Briefly stated, S. 1333 would authorize the construction of a high dam and associated powerplant in the Hells Canyon reach of the Snake River along the boundary between Idaho and Oregon, and would also authorize the construction of certain smaller hydroelectric facilities at Scriver Creek in west central Idaho. In addition, S. 1333 would provide a framework for using power revenues from these works as a means for returning part of the costs of future irrigation developments in the central and upper Snake River Basin, if and when such developments were authorized by the Congress. The bill, however, does not itself authorize construction of any irrigation developments.

Bills for the same purposes as S. 1333 were introduced in the House of Representatives and the Senate during the 82d and 83d Congresses. No action on any of these bills was taken by the Congress. A comparison of S. 1333 with S. 1664, 83d Congress, reveals these principal differences between the two:

(1) S. 1333 provides that "the operation of the Hells Canyon Dam shall be only such as does not conflict with present and future rights to the use of water for irrigation or other beneficial consumptive purposes, whether now or hereafter existing, valid under State law, of the upstream waters of the Snake River and its tributaries." Under S. 1664, there would have been a blanket priority in favor of future upstream depletions of water for irrigation and other beneficial consumptive uses, as well as for existing depletions, pending a Columbia Basin interstate compact; thereafter the operation of Hells Canyon would have been in accordance with any apportionments of water made by that compact. The priority provision in its present form would not remove any of the existing uncertainty conctrning the extent to which future upstream depletions might affect the power output of the Hells Canyon Dam.

(2) S. 1333 would permanently reserve 500,000 kilowatts of power for sale to power marketing agencies serving consumers in the Snake River Basin above the mouth of the Clearwater River and in all parts of the State of Idaho, whether or not within that basin. The bill provides that the power shall be marketed in accordance with the Bonneville Project Act of 1937, as amended. S. 1664 made a similar reservation of power, but provided for marketing in accordance with the Federal reclamation laws and section 5 of the Flood Control Act of 1944.

(3) S. 1664 would have required the Secretary of the Interior immediately following the termination of the national emergency, but in no event later than during the 84th Congress, to transmit to the Congress his recommendations relative to the authorization, as a part of a Snake River project, of facilities for the irrigation of some 192,000 acres of irrigable land in the vicinity of Mountain Home, Idaho. S. 1333 provides for such a report to be made during the 85th Congress.

(4) S. 1333 provides for the furnishing from McNary Dam of the power needed for construction of the Hells Canyon project. S. 1664 contained no such provision.

The construction of the facilities covered by the immediate authorizations contained in S. 1333 would involve the expenditure of considerable sums of money. We estimated last year that the cost of the Hells Canyon Dam and powerplant would be almost $357 million. The cost of the transmission facilities that would be necessary to interconnect the powerplant with the basic grid of the Columbia Basin power system and to provide for the marketing of the power output could come to around $144 million. The Scriver Creek power facilities would come to another $50 million.

In order for the full benefits to be realized from the storage capacity which a high dam at Hells Canyon would provide, additional turbines and generators, estimated to cost over $58 million, would have to be installed at 9 of the dams now authorized for construction on the Columbia River and the lower Snake River. Of these 9 dams, only 3 (McNary, Chief Joseph, and the Dalles) are under construction. McNary is nearly finished, but Chief Joseph is only partially completed, and the Dalles is in the early stages of construction. The total cost of the two latter, exclusive of transmission lines, has been estimated at over $541 million. The six remaining authorized dams (John Day, Priest Rapids, Ice Harbor, Lower Monumental, Little Goose, and Lower Granite) have not as yet reached the construction stage. These six dams have an estimated cost of over $1,211 million, exclusive of transmission lines.

While all of these cost estimates are necessarily subject to revision in the light of actual conditions at the time of construction, it is evident that the Federal Government already has an authorized program on the Columbia and lower Snake Rivers that would probably require more than $1½ billion to complete, entirely aside from the cost of Hells Canyon. When there is added to this, still without considering Hells Canyon, the cost of other projects now underway or authorized in the other portions of the Columbia River Basin (such as Palisades and Lookout Point) it is even more apparent that the Federal Government is presently committed to a program of comprehensive development of the water and related land resources of the Pacific Northwest that will necessitate very large expenditures. Yet the fact is that even this program, big as it is, will not do the entire job.

We are firmly convinced that where a non-Federal proposal can provide results which, in terms of comprehensive development, are reasonably comparable with those anticipated from a Federal project, the people of the region should be encouraged to utilize, in every proper way, the available capacities of public or private organizations for doing the job on a non-Federal basis under conditions fully protecting the public interest. By such a course of action, soundly conceived and vigorously pursued, the realization of the benefits of regional development will be speeded up, and, at the same time, the ability of the Nation as a whole to accomplish the ultimate goal will be enhanced. This is because the Federal Government will thereby be enabled to devote more of its available energies and expenditures toward the realization of elements in the total plan that are clearly beyond the practical capabilities of the States and other non-Federal organizations.

The Federal Power Commission now has under consideration the matter of an application for a license to develop this stretch of the Snake River by a private corporation. It is within the statutory authority and responsibility of that Commission to determine whether or not the plan proposed is adapted to the development, conservation, and utilization in the public interest of the water resources of the region, and whether or not the same is compatible with the overall development of these resources. Extended hearings with relation to this matter have been held and the Commission's examiner has the matter under advisement. This Department has made available to the Federal Power Commission all of the information, reports, memoranda, and testimony of engineers and other witnesses that have been requested by the Commission.

It is pertinent to observe that S. 1333 would not, in and of itself, authorize the construction of any irrigation works for the Mountain Home area or any other area. It is also pertinent to observe that the Hells Canyon Dam contemplated by S. 1333 would not deliver water to, or otherwise serve as a physical part of, the proposed Mountain Home development or any other irrigation development.

As a step in bringing out all the facts relating to the irrigation potentials of the Mountain Home area, such as possible alternate means of providing water, selection of lands for initial development, costs, benefits, sources of financial assistance, and all other facets of the problem, the Department is making the necessary investigations, within the limits of available funds, and plans to report thereon to the President and the Congress as soon as practicable.

It follows from the above that the Department of the Interior recommends that S. 1333 be not enacted. We propose, however, to continue to study and report on Mountain Home irrigation along the lines above expressed.

Hearings on S. 1333 have, I am advised, been scheduled to begin May 2. In view of this, the present report is being submitted to your committee prior to its clearance through the Bureau of the Budget. A copy is also being submitted to that Bureau with a request that we be advised concerning the relation of S. 1333 to the program of the President. Upon receipt of that advice, we expect to communicate with you further.

Sincerely yours,

DOUGLAS MCKAY,
Secretary of the Interior.

Mr. BUDGE. Mr. Chairman, at this point I would like to call Mr. Parry to give just a geographical description so that the committee will know which way this river is flowing and where these different proposals are intended to be put. Mr. Parry will be on again tomorrow, at which time he will be available for any questioning. I simply want him to make an introductory statement at this point.

Mr. ASPINALL. Without objection, Mr. Parry will take the witness stand. He is counsel for the Idaho Power Co. He will give his statement on the geography and physiography involved, and then he will be excused without questioning this morning and will be open for questioning tomorrow.

Mr. BUDGE. Mr. Chairman, I would like to state further, in qualifying Mr. Parry, that he has been for many years the attorney for most of the canal companies and irrigation districts on his stretch of the river and is very well qualified as a water attorney. I assume that is why the power company employed him as special counsel to present their case before the Federal Power Commission. He does not have any longtime tenure with the Idaho Power Co.

STATEMENT OF R. P. PARRY, TWIN FALLS, IDAHO, COUNSEL, IDAHO POWER CO.

Mr. PARRY. For the record, my name is R. P. Parry. As has been indicated, I am a lawyer residing at Twin Falls, Idaho.

It seems to me that perhaps some of these rather complex questions can be simplified by understanding that the Snake River has a number of rather unique geographical characteristics. So also is there a rather unique combination of streamflows, as has been indicated here, between the Snake River and the Columbia River.

It was our thought that perhaps in a few moments, even though I am partisan in the matter and will be so as a witness, that I could perhaps make a rather factual and, I hope, objective statement of the geographical situation and of the history of the various proposals that have been before this Congress and the other body for, lo, these many years on this high dam.

The Snake River divides itself into several very distinct and completely separate geographical situations. It is unfortunate that the map we have before us is not able to portray, along with the things there portrayed, also the high mountains which surround the valley, cut it in two and greatly affect the problems that we have.

Substantially all the water that flows down through the main stem of the Snake River arises in the high mountain regions of northeastern Wyoming, starting in Yellowstone Park and continuing down through

the Teton Basin. The main Snake River makes a very distinct hairpin turn and runs back into Idaho. About the place where the river debauches from the mountains there is indicated by the eastern edge of the green. Nearly everything to the east of that is the high mountains. But right approximately along the State line and immediately east of the little patch of green which I am pointing to, which is Teton Valley in Idaho, are the Great Teton Mountains rising some 12,000 feet.

There is another fork of the Snake River, the North Fork, which comes out of the high mountain country immediately west of Yellowstone Park and again comes out of the mountains about at the northerly edge of the green.

From that point over on the eastern part of Idaho, in a great sort of a bow running some 400 miles across the State of Idaho, is what was originally a great arid plain. It is a great mountain valley, with mountain ranges roughly along the Nevada line to the south and another range of mountains, Sawtooth Mountains, with the famous Sun Valley in it, running along to the north. The width of the valley varies from 50 to 100 miles and it has an average rainfall of about 9 or 10 inches. It is broken, fissured lava covered by volcanic soil. It has almost 300 days a year sunshine. The volcanic soil is very fertile when water is applied.

The early settlers, of course, found a substantial stream of water flowing out of the mountains to the east and down the river, and starting in 1870, first as individuals, and then as small groups, and then as larger canal companies, started irrigating lands simply by diversion dams in the stream; no storage, but taking the streamflow as they found it.

Under the western law—first in time, first in right—the great body of water rights has been created in the upper valley running down through and clear down to the point which has been variously referred to as Milner Dam, which is just about in the middle of the dam, a little west of the town of Burley, a little east of the town of Twin Falls.

At that place there is a freak geological condition. The river has cut a great narrow box canyon in the lava rock which at my own home at Twin Falls is 473 feet deep. So at this Milner Dam is the last place it is possible to run water out on either side of the river by gravity.

From that point on, the statement has been made that from Milner on in the Snake River any water that spills over that dam, so far as irrigation is concerned, runs unused to the Pacific Ocean.

As I say, in the early days they were able to divert and still use under those old rights the natural flow of the stream clear down to and including the canal that comes out on the south side of the river and surrounds my home of Twin Falls where there is the largest privately financed and constructed irrigation canal company in the United States, serving 200,000 acres of land.

From that time on as the next development through the natural full stream of the river after the flood season in the spring—and there is one characteristic that is typical of these mountain stream: There is a big flash flood whenever the snow fields melt, which on the Snake usually comes early, sometimes in February, and usually always in March and April, and then after that flood is gone the river drops immediately and then holds fairly constant.

So it was found that storage was needed. Probably 500,000 acres of land were brought in there by private individuals before the Government ever showed upon the scene.

The Government then proposed the Minidoka project around the towns of Burley and Rupert and to get storage for that project went up to Jackson Lake in Wyoming and placed a small barrier dam in there to raise slightly the water level of that lake so that the fundamental water rights in the lower part of Jackson Lake belong to the Government irrigation project down at Burley.

The next step was the building of other privately financed projects on the north side of the river, and there is the Northside Canal Co. of 160,000 acres and the Bigwood Canal Co. of some 75,000 acres, another large project.

When they came in the picture they went back up and raised the dam at Jackson Lake. The Twin Falls Canal Co. participated in that. So that the upper portion of Jackson Lake water is again pertinent down in the middle of Idaho.

There is another geological condition which has been mentioned briefly here, and that is that the whole north side of the river where it runs in a bow is underlined by creviced and fissured lava and it is relatively easy for water to travel underground. Tests have shown that there is leakage from the westerly side of the Snake River up in the area north of Idaho Falls, and, in fact, some of that area is irrigated by raising it.

That water apparently drops underground and comes in a southwesterly direction through the plain.

So also are there several streams—Birch Creek, Little Lost River, Big Lost River, and some others—which simply come down and any excess water not used by the irrigation sinks in the underground. That water appears in a number of large springs in what is called the Hagerman Valley area. It is a place where the river turns and flows north immediately north of Twin Falls. There were springs here before the white men came, where that water was running, and, as has been pointed out, obviously when the Twin Falls tract was irrigated, and Minidoka tract and others, some 500,000 acres of land irrigated in the area surrounding Twin Falls, the return flow from that tract flows back into the same Hagerman Valley area. Some falls over the surface and some increases flow in the springs.

The Snake River then flows westerly and gets around to the point variously referred to as Weiser, Idaho, which is not particularly indicated on this map, but it is about at the junction of the Burnt—a little above the place where the Burnt River runs into the Snake River. There the Snake River starts down into another great canyon, which is the one that has been given the dramatic name of the Hells Canyon, with the high mountains on each side.

So to all intents and purposes when the Snake River passes the mouth of the Burnt River it leaves what we call southern Idaho and is gone.

As it goes on down there flows into it at a point toward the top of the map the Salmon River, which is a great river that runs in a great semicircle. It starts over in the central part of Idaho. It

67129—56——17

flows east, it flows north, it flows west through a great canyon called the River of No Return, and finally into the Snake River.

Immediately downstream from the Salmon River is the Clearwater River running into the Snake River at the town of Lewiston, another of the large tributaries of the Snake River.

The flow of the Snake River then as it proceeds westerly from Lewiston over to its confluence with the Columbia River is, in effect, the combination of the flows of the Clearwater River to the north, on which there is no irrigation at all. It comes out of a high mountain country, a great primitive area famous for its hunting—and the Salmon River, which has been referred to as the pasture for salmon, and probably the greatest place left in the United States where the salmon return to spawn and die at the end of their life cycle. And then the Snake River itself as it comes around through the irrigated area.

The relative percentage of flows of those streams is rather interesting. On the average annual runoff basis, the Clearwater River, which flows into the Snake River at Lewiston, furnishes 29.9 percent of the flow of the river measured immediately below Lewiston, or on an average of about 10 million acre-feet a year.

The Salmon River, entering a little farther upstream, furnishes 21.6 percent of the flow, or on an average basis about 7.4 million acre-feet.

The Snake River at what we call variously Oxbow or Hells Canyon or Weiser flows about 37 percent of the total flow of the river.

The thing to keep in mind is that on all of these larger tributaries of the Snake River—the Boise Valley is the large area of green around the city of Boise, and it is in that area that Mrs. Steel, who has just testified, has several fine, irrigated farms. And the area on the Malheur River, coming in from Oregon, or the Owyhee River coming from Nevada and Oregon; they are tributaries of the Snake, and they, too, are in a dynamic state of irrigation development.

The flow of the water then at the Snake River down in the area involved in the litigation here is composed not only of what return flow comes in below Milner or above King Hill—they are synonymous terms—but also, as has not yet been mentioned in this record, from the return flows, if any, from the Boise River, Payette River, the Owyhee, and Bruno.

So at a point below all the irrigation and down in the deep canyon, still north above the mouth of the Powder River, there has been long discussion as to a proper development for hydroelectric power.

Somewhere around 1908 and 1909 a predecessor company to the present Idaho Power Co., that company being called the Idaho-Oregon Co., went in and built quite a primitive powerplant at the place called Oxbow, at a point where the river makes an oxbow. They drilled a tunnel through the narrow part of the bow, which tunnel still is there, built a little powerplant, and transmission line was built on down there, and it is still operating.

The Idaho Power Co. has a proposal to develop that part of the river and so also has the Bureau of Reclamation. Certainly parts of their proposed plans are similar and in one respect there is a major difference.

They are similar in this: that the effective head of the river at that stretch, that is, the usable hydraulic head, is 602 feet. The two plans are identical. The full 602 feet head of river would be used by

either one. The Idaho Power Co. proposes to do this by three dams and the Bureau of Reclamation and others suggested a single dam, which has been mentioned.

The installed capability of the two plans initially has but little variation. On the single dam it is proposed to put in generators of 800,000 kilowatt capacity. The company's proposal is 783,000, a minor difference of about 17,000.

It would seem dependable capacity of the two plans is substantially similar because the company's plans would never have less than a minimum head of 301 feet, while the high dam at times would be drawing down, as has been brought out by the questioning, of something in excess of 300 feet.

I should say, in order to describe the company plan to see what we are talking about, it consists of three dams. The upper one, a short distance downstream from the Powder River, is the Brownlee Dam, which would be 395 feet high, the 15th largest dam in the United States; would have installed capacity of 360,000 kilowatts, a peaking capability of 414,000 kilowatts; can be constructed in 30 to 36 months. It would have there a million acre-feet of storage, which would be available both for power production through that dam itself and the two lower dams below it, and everything else below it on the Columbia River. It would also be built in conformity with the design of the Army engineers, with sufficiently large gate capacity to allow the speedy emptying of the reservoir so that a hold could be made there to catch the million acre-feet of water whenever it is required for flood control.

It is designed to operate at the minimum flow specified by the Army engineers for navigation, and the one place where it would seem that the minimum flow that is allowed to go through any dam built in this area is effective is in the 30-mile stretch of the river above Lewiston to a point called Limestone where it is not proposed to have slack-water navigation, but where the amount of flow in the stream will control the navigability.

Below that point on both the Snake River and the Columbia River all navigation is proposed to be slack-water navigation, with one dam backing up to the next dam so it will be a series of steps, and the minimum flow will not be of any importance.

The next plant downstream below the Brownlee plant which the Idaho Power Co. proposes to build is the Oxbow Dam, 200 feet high, about twice the height of Bonneville Dam, with an installation of 161,000 kilowatts, peaking capability of 173,000 kilowatts, which, according to the evidence that has been presented in these numerous hearings, if construction is started prior to August 1 in any given year, can be on the line within 12 months because of the unusual circumstances that I mentioned of the old tunnel being already built and in existence and available for turning the river during the construction period. If construction is started later than August 1 in any year, it will take about 18 months to build it.

The final dam downstream in the company's program is at the same Hells Canyon site, and there the company proposes to build a dam 320 feet high, with 272,000 kilowatts and 312,000 kilowatts of peaking capability.

In combination, as I mentioned, the 3 dams have a hydraulic height of 602 feet. The initial installation is 783,000 kilowatts, with

peaking capability of 900,000 kilowatts, and with provisions provided that as soon as the load shape in the Pacific Northwest demands it, having in mind they will be fully integrated both electrically and hydraulically, that there will be additional installations to bring the installation up to 1,175,000 kilowatts installed, 1,300,000 kilowatts of peaking capability. So at that time the planned capability of the company's project is greater than that of the high dam.

The difference between the two projects is solely in the amount of storage capacity. The high dam would provide 3,800,000 acre-feet of capacity. The company's dam would provide 1 million.

So I believe it is not unfair to say that the actual issue involved is the necessity of building that additional storage.

Obviously, the million acre-feet in the company's dam will provide the same amount of generation both at site and downstream as will a million acre-feet of water in the high dam.

This downstream generation perhaps can be cleared up this way: Between Lewiston and the Columbia River there are proposed 4 dams, which for convenience have been referred to as the 4 lower snakes. If I can recall the names, they are: Ice Harbor, Lower Monumental, Little Goose and Lower Granite.

Below those 4 dams on the Snake River and below the mouth of the Snake River on the Columbia are 3 dams built or building—Bonneville, the Dalles, the McNary Dam, and the proposed and authorized John Day Dam.

In order to provide the downstream generation which has been assumed by the Interior witnesses who have appeared so far, it has been assumed that all 8 dams, the 4 lower snakes and the John Day Dam—5 of them will be built in addition to the 3 now in existence.

The history of this project is something like this:

It has been before the Congress continuously since February 3, 1950; where, in the 81st Congress, 2d session, when H. R. 5472 went over to the Senate there was first proposed a committee amendment authorizing this same dam, which was defeated, and then several other amendments varying in wording, all of which were defeated. Finally one of the Senators said as far as he could see every proposal had been already acted on twice.

In the 82d Congress, 1st session, H. R. 5743 was introduced and referred to this committee. There were lengthy hearings extending from, as I recall, March until June, with recesses, attended by many of us who are here today. And at the end of that hearing the matter was indefinitely postponed by unanimous vote of this committe.

In the 82d Congress, 2d session, a bill S. 2812 was introduced, referred to committee and died there.

In the 83d Congress, 1st session, 4 bills were introduced in the House and Senate, S. 1664, H. R. 4648, H. R. 4649, H. R. 4650, and nothing was done there.

Of course, as has been brought out, there is S. 1333 in this 84th Congress, 1st session, on which we have participated in lengthy hearings, and the current hearing.

In the meantime there has been the procedure before the Federal Power Commission.

In the year 1947 the Idaho Power Co. asked to have a preliminary permit for the Oxbow plant, which permit under the Federal Power

Commission rules, allowed them simply to go in and do exploratory work prior to the time they make formal application for license.

Since the matter was pending in Congress that was allowed to stand in abeyance until 1950 when formal application was made for license, which was again allowed to stand in abeyance while congressional hearings were held, which I have mentioned.

In 1952 or early 1953 the Idaho Power Co. also made formal applications for its Brownlee and Hells Canyon plants. The three applications were combined. Hearings were begun in Washington before the Federal Power Commission on July 7, 1953. Prior to that time field hearings had been held in the summer of 1952 in Baker, Oreg., and in Boise, Idaho.

The hearings before the Power Commission finally concluded with some 20,000 pages of testimony, lengthy and exhaustive engineering, financial, economical, and other testimony of all kinds. The matter as it now stands was submitted to the full Commission upon oral argument on July 6 of this year, where it is now pending.

One of the other issues in the matter has been the discussion of the relative relationship of the Hells Canyon Dam to the phosphate beds. The phosphate beds in Idaho are located beyond the Idaho Power Co.'s territory, beyond the irrigated areas, shown east of Pocatello and in what is generally the extreme southeastern corner of Idaho, overlapping some over into Wyoming and some down into Utah.

By transmission miles, the evidence shows that from the Hells Canyon site to the phosphate beds is something over 400 miles, and I believe the illustration has been used that the Hells Canyon site is further from the phosphate beds than, say, Toronto, Canada, would be from Washington.

The point of issue of the irrigators is this: There is no disagreement between any of the engineers, so far as I know, that during 8 months of the year whatever water flows in Snake River below Milner Dam, whether it is return flow that comes from upstream irrigation, whether it is contributions from the tributaries, or whatever its source, must be allowed to flow through whatever powerplant is built at that point, whether it is the high dam or 3 dams, must be allowed to go on down through the lower Snake dams, if and when they are built; must in any event be allowed to flow down through the great dams on the lower Columbia, because it is just obviously economically silly during those 8 months to stop any water and store it up in the Hells Canyon when it could be used for power production during the short periods in the lower Columbia.

So there is no argument, as I understand it, between any engineers. But the only time water would be stored in the Hells Canyon area is during the 4 months of the so-called storage period—April 15 to August 15—on an average.

There has been and there will be conflicts as to how much space can be annually filled during those 4 months.

Above the dam is this great irrigated empire, one of the greatest in the world, which presently consists of about 2¾ million acres of irrigated land.

The ones who are most vitally interested are not the ones such as Mrs. Steel and others on the tributaries, but those having water rights on the upper Snake River and who are interested in the large

irrigation storage reservoirs at American Falls Reservoir, which only filled 50 percent in the thirties, in Jackson Lake, which many times has not filled at all, or in the other irrigation reservoirs, who foresee that if there is this investment in Hells Canyon Dam and its associated plants and transmission lines, which run into some astronomical figures, from $1.2 billion to $1.5 billion, that if there is that great Federal investment down there, obviously, since there are no irrigation features concerned, built under the commerce clause of the Constitution, and we run into another cycle of dry years such as we have had in the past, there will be the conflict of interest of the Federal dam on the one hand, which obviously cannot be filled, and the need for both the direct flow irrigation diversion and the filling of the irrigation reservoirs upstream. And that conflict has gotten the irrigators into this controversy and, if I may be pardoned a personal reference, is how I got into it.

So I believe that I can factually state that the issue is: Is it justifiable to construct in the Hells Canyon reach more than the 1 million acre-feet of storage, which can be filled every year and which the private company is desirous of building, and then the possibility—and it is a very complex legal question which I would like to later discuss in more detail—of conflict between the irrigation rights upstream on the main stem of the Snake River and this Federal dam if it were built.

Thank you.

Mr. ASPINALL. Thank you very much. The testimony which you gave this morning will be open for cross-examination tomorrow when you make your additional statement.

Dr. MILLER. I wonder if I might ask him one question, Mr. Budge. What is the yellow part on the map?

Mr. PARRY. Thank you. The yellow part is proposed future irrigation as proposed by the Bureau of Reclamation.

Dr. MILLER. Where would they get that water?

Mr. PARRY. From various sources. That for the area around the Mountain Home area, to which I am pointing with my left hand and is south of Boise, would come from either 1 of 2 sources: Either by very long and very expensive diversion tunnels from the Payette River to the Boise River and again through another mountain range or an alternative plan, which will be covered tomorrow, by water from the Snake River and by pumping and exchange of water. Some of the other could be taken out of the Snake River either by gravity dams or pumping and putting on what is called the Bruno area south of the Snake River and the eastern part of the Mountain Home, either of which development would greatly reduce the flow of water past the Hells Canyon site.

There is much other proposed development to the east. Some of it is shown in yellow near American Falls, and some is shown in yellow near Mud Lake, which is pumping from underground water.

In addition to that, there has been an increase of irrigation in the area since 1948 of about 200,000 acres, most all of it pumping from underground water by private individuals.

Dr. MILLER. Thank you.

Mr. PARRY. In other words, there has been a development in the area there of private development about comparable to the acreage brought in on the Grand Coulee project.

Dr. MILLER. Thank you.

Mr. SISK. A point of inquiry, Mr. Chairman.

Mr. ASPINALL. Yes.

Mr. SISK. Is there an understanding there will be no questioning at all today?

Mr. ASPINALL. There was an understanding this witness would not be questioned today, he would appear tomorrow, and at that time the testimony given this morning as well as what he gives tomorrow would be open for questioning.

At this time the Chair understands that the next witness is Mr. Holland Houston, of Olympia, Wash., consulting engineer, who appears in opposition to the legislation.

Mr. BUDGE. Mr. Chairman, I would like to add to that that Mr. Houston is representing the State of Washington as the Governor's representative.

Mr. SISK. A point of inquiry. Is there a copy of the statement of the gentleman who has just concluded? Do we have any opportunity to study his statement?

Mr. ASPINALL. The statement given was supposed to be a factual statement as to the geography and physiography of the area. As I understand, there was no formal statement.

Mr. Houston, you may proceed. We are glad to have you here.

STATEMENT OF HOLLAND H. HOUSTON, OLYMPIA, WASH., CONSULTING ENGINEER

Mr. HOUSTON. Chairman Aspinall, Mrs. Pfost, Mrs. Green, the Congressman from my own State, Jack Westland, and gentlemen, I am appearing here today at the request of Governor Langlie to present our point of view on the problem of the development of the Columbia River Basin.

My background is that of a professional engineer. I have a master's degree from Massachusetts Institute of Technology in electrical engineering. I am a professional engineer in the State of Washington, with both licenses in mechanical and electrical engineering.

For the last approximately 9 years I have been employed by the State of Washington, first in the administration of Mon C. Wallgren, and through two administrations of Governor Langlie, as consultant on power problems relating to the development of the Columbia River Basin.

Presently we are somewhat disturbed at the trend of the so-called comprehensive plan for the development of the Columbia River. It is our considered belief that if the present program continues as it is now going that the additional annual costs to the rate payers of the Pacific Northwest will approach $100 million each year.

The statement which I have given you is somewhat bulky. The first three sections of that statement summarizes the discussions which my Governor has had with Major General Sturgis and Brigadier General Eichner regarding the program as established in House Document 531. We had meetings in Chicago last December and an additional meeting in Washington, D. C., in which I explained to General Eichner and General Sturgis where we felt that changes should be made in the overall program.

To begin with, I would like to show you this chart. This is a picture of the load growth on the system of the Northwest power pool from 1915 to the present time. It is figure No. V in the report which I have had given to you. It shows the rate of growth historically from 1915 up to 1954.

In addition to that, I have included on the chart the rate of growth of sales of electric energy for the United States as a whole. You will notice they are both quite parallel and at a rate of approximately 6.8 percent per annum.

Now in considering future load requirements of the area, one method of analysis is simply to extend this rate of growth up until the date required. You will notice here that the actual historic figures have gotten 1 million kilowatts above the trend line which I am using, and I think on that basis it can be considered entirely conservative.

In the statements made by Mr. Riter and Mr. Ostrander, they talked to you of the C–2 system or the level of load served by the C–2 system. The C–2 system is shown here on the curve and is represented by the figure that Mr. Ostrander gave you of 7.8 million average kilowatts in the Federal system, to which we must add the existing average energy of the other utilities in the area—the city of Seattle, the city of Tacoma, the several private utilities—giving us a total of 9.7 million average kilowatts.

I agree 100 percent with Mr. Riter in that figure because there is the point right there [indicating]. And the 9.7, after you have added in the figures of the other utilities, is in perfect agreement with it.

Any dam that gets under construction at this time will take of the order of 8 years to complete. So we start with our present date. We come over here 8 years and we find that the figures that you have been given so far in this hearing refer to a next added project 3 years after the completion of the project, and nothing has been given you over 47 years of the balance of the payout period.

Now that is important. I would like to read directly from the testimony given by Mr. Lesher Wing, regional engineer of the Federal Power Commission, in the Hells Canyon hearing before the Federal Power Commission, his statement of incompatible projects.

What he meant was this when he called them incompatible: A project can be put in the river, a high dam at Hells Canyon, or three low dams, but you cannot put them both in there. I would like to read you his statement:

> You are forever foreclosing yourself from doing anything except building the project which you have selected in that reach. Therefore, you have to analyze what the contribution is of that particular project, not just at the spot of time to a system which you cannot even be sure perhaps will be built or be fully in existence at the time the increment is added, but you have to analyze it over the entire period of the operation of the system you are considering. And the reason you have to do that is each of the projects you might select for the particular reach of the river have a different contribution at a different time.

Now this is my own statement:

In an operational sense there is definite incompatibility between upstream storage and nuclear or other forms of thermal electric generation. They are not physically incompatible but they are incompatible from an operating standpoint.

In short, if we were to carry our program through and install 41 million acre-feet above the Dalles project, as proposed in House Docu-

ment 531, and then we come to the end of available low-cost hydro in the basin and begin to build steam-electric generation, although your reservoirs are in the river basin they will not be used for power purposes.

I have also shown on this chart 13.3 million average kilowatts total average energy from hydro resources that are less costly than thermal electric generation built by public funds. We find that that time occurs in 1971, just 16 years from the present time.

I next want to discuss with you the assumptions of House Document 531, the Army engineers' report, that is, the assumptions which are applicable to today's discussion.

In the first place, the Army engineers chose to study an all-Federal, all-hydro system.

Now, in doing so, gentlemen, when you come to an adverse water year, what do you have to do? You have a system with only hydroelectric generation. You have a low-flow year. Your only source of additional energy is drafting of upstream storage.

In drafting of upstream storage you draw the heads on all your storage projects. You decrease the ability of every storage project in the basin to carry loads.

I wish you gentlemen might have seen Grand Coulee the other day before the spring flood began. It was a pretty sick looking mudhole, with the water down a hundred feet and the full natural flow of the river going through that reduced head in an attempt to limp along and furnish power for the area. You could not hold the head. You had to draft it because that was your only source of additional energy.

Now, then, when we come to a system that includes also thermal-electric generation you have an entirely different problem.

Mr. BUDGE. When you are talking about these plans and arriving at the thermal, which means heat or steam——

Mr. HOUSTON. Yes.

Mr. BUDGE. These plans that you are talking about, they are not yours; are they? They are the Bureau of Reclamation plans, are they not, and the Army engineers—the C–2 system, for example?

Mr. HOUSTON. The C–2 system was the Army engineer's designation for serving a load with an average energy requirement of 7.8 million kilowatts and a peaking requirement of 10 million kilowatts, an all-Federal system. It is the plan of the Army engineers in that particular instance.

We have heard a great deal about the critical water year of 1936–37, beginning in August and carrying across through April. The observed flow in that fashion [indicating]. This chart is figure XI of my filed statement.

At the present time there are 14 million acre-feet of storage in the Columbia River Basin, which brings this minimum flow by release of storage up to this level of 86,000 cubic feet per second. Any future storage would be used to further increase the amount, as I explained, on an all-hydro system.

Your only other source in an adverse water year is to release upstream storage to fill up your requirements, and that is what I have shown on this map.

This next chart, which is a combination of figures I and II in my statement, shows a typical week load curve, the way the variations

are. This is Sunday, Monday, Tuesday, across, and this final is Saturday. Like that [indicating].

Now, an engineer cannot do anything with that curve in attempting to spot some generators on there. So what he does is to take a typical week and multiply by 4⅓ to make it into a month. Then he takes the high peaks and establishes them on this side and puts them in descending order of magnitude, and we come up with what we call a load-duration curve.

Now, it is this curve that is perhaps the most important thing I want to get across to you today.

We have need of generation here that runs a hundred percent of the time. This curve is expressed in percent of time, and this is stated in percent of system peak load.

Now, this hundred percent of peak load today on the Northwest power pool is 8.25 million average kilowatts. That is the forecast for the winter of 1955–56.

This low continuous portion is approximately 40 percent or slightly more of the peak.

Now we have need of generation that can operate continuously. We have need of generation that will operate 10 hours a day, 5 week days, and in that fashion continuing throughout the month.

Any operator will place the project, will assign the project to the load curve where it will operate most economically, where the combined resources of the area will give you maximum load-carrying ability for minimum plant investment.

On this chart XIII I have shown the Chief Joseph project on the Columbia River operated in two different fashions.

First, I should perhaps give you the value of power in the Pacific Northwest. Mr. Lesher Wing, regional engineer of the Federal Power Commission, has been responsible for establishing those values for all of us to use in connection with the restudy of the middle Snake River Basin and other problems that confront the Columbia Basin Interagency Committee and other groups. And his value of power at load center is $16.50 a kilowatt-year, plus 3.64 mills per killowatt-hour. That is a figure which represents the value of power at load center.

Now the value of power at project is much less than that because you have the transmission losses, both capacity loss and energy loss. The capacity loss is usually figured at 10 percent and energy loss at 7 percent. So you came out with an answer, after allowing for the cost of transmission—Mr. Wing's figure is $8.35 a kilowatt-year plus 3.39 mills per kilowatt-hour.

Any time you draft the storage reservoir you destroy its capacity value, its ability to carry loads, or you destroy that $8.35 a kilowatt-year. You also reduce the energy value.

As an example of that, I have shown Chief Joseph Dam in an ultimate installed capacity of 36 units, operating under an adverse month of an adverse year. In one example it is loaded on base and runs 24 hours a day. It would be the same thing as using it as a source of additional energy in drafting storage. Only the condition of a storage reservoir, since you lower its head as well, makes less value.

We find that this Chief Joseph has capacity to carry 1,020,000 kilowatts of load 24 hours a day. That 1,020,000 kilowatts has an annual value of $8,650,000.

Now that is simply butchering the plant. Any reasonable operator would assign that to operate about 300 hours out of the month of 744 hours and would have a load-carrying ability of 2.55 million kilowatts, with an annual capacity value, not of $8,650,000, but $21,700,000.

In connection with our discussions with the Chief of Army Engineers, I loaded all the projects of the Columbia River Basin on a load-duration curve and showed their particular operating position under an adverse water year, adverse month. I took as my time the year of 1985, which is the midpoint of the economic life or pay out of a project started today.

Gentlemen, I got quite a surprise when I began to load this load curve, and this was the beginning of our contacts with the Army engineers with respect to modification of the program.

The first thing I found was that the Grand Coulee project completely blocked the Columbia River. You have a choice between putting in 18 more units or when you come to the type of operation that you will have in 1985 you will have to open your sluice gates and let the water come down.

Why is that true?

The Grand Coulee project has 18 Francis runners, with hydraulic capacity of a little over 5,000 second-feet apiece, making a total of 92,000 second-feet.

Chief Joseph, the next project down the river, is designed initially to come up to about 27 units, and it has a hydraulic capacity of 176,000 second-feet, and there is no storage between the two projects. So I cannot quite see how you are going to get water by Grand Coulee and put it through Chief Joseph with any such incongruous relationship of wheel capacity.

As we go on down the river, Rocky Reach and Wells have a hydraulic capacity of 182,000 and 186,000 cubic feet per second.

Mr. PILLION. May I ask just one question here on something I missed? What is the cubic foot per second of the Chief Joseph?

Mr. HOUSTON. About 176,000.

Mr. CHRISTOPHER. Mr. Chairman——

Mr. HOUSTON. Congressman, there is some doubt——

Mr. ASPINALL. Just a minute.

Mr. HOUSTON. Of the number of units that will be in there. It will be somewhere, I suspect, before they get through up to 40 units with hydraulic capacity of approximately 200,000 second-feet. That is where it belongs.

Mr. ASPINALL. Just a minute.

Mr. CHRISTOPHER. Since it was the understanding there would be no questions asked this gentleman, I am going to be constrained to object if any questions are asked unless they are thrown open to full questioning. Either we have all the questions we want to ask or none, or I am going to object. I have no objection now.

Mr. ASPINALL. The gentleman will proceed.

Mr. HOUSTON. A particularly interesting situation develops in the relationship between the Dalles Dam on the main stem on the lower Columbia, Priest Rapids above the mouth of the Snake River, and Ice Harbor, the lowest project on the Snake River.

Priest Rapids is designed ultimately for 150,000 second-foot wheel capacity; Ice Harbor for 62,000 wheel capacity; and the Dalles, 330,000 wheel capacity.

If you add Ice Harbor and Priest Rapids together you get 212,000 cubic feet per second, and there is no storage between the mouth of the Snake River and the Dalles.

Gentlemen, there is a great deal of detail to this and I cannot hope to cover it all. I have it in the report and I hope you find time to read it.

I will tell you this: that the result of that study showed that between Grande Coulee and McNary pool there was 1,400,000 kilowatts of peaking capacity lost because of improper height of dam and an average energy of about 410,000 kilowatts.

A high-head Hells Canyon Dam blocks the Snake River in exactly the same fashion that Grand Coulee is blocking the main stem of the Columbia.

It has a hydraulic capacity of approximately 24,000 cubic feet per second.

Now I want to go back a little bit further to one of these other charts. The chart is figure VII.

In 1985 this is all the hydro there is in the Columbia River Basin [indicating] and this represents 22½ million kilowatts of steam operating on base. In other words, hydro is operated intermittently throughout the period. Steam is placed on base and run around the clock.

Mr. BUDGE. Mr. Houston, on your comment there relative to Hells Canyon Dam, have you checked this with the Corps of Army Engineers as to what their position might be?

Mr. HOUSTON. Congressman, the Army engineers have had nothing to do with the present design of high-head Hells Canyon. That is a problem of the Department of the Interior because the Army engineers have not restudied since the agreement of 1949 any part of high Hells Canyon.

Mr. BUDGE. Generally speaking, what is your conclusion as to the value of the storage which is the difference between the two plans of development?

Mr. HOUSTON. May I answer that question just a few minutes later, if you please?

Mr. BUDGE. Yes.

Mr. HOUSTON. If the hydraulic capacities of the whole river system from Coulee down and on the Snake River are corrected to what they should be, here is the hydraulic capacity of 22 units at the Dalles. These little protrusions on figure X you see here are the only water in the whole river basin that needs to be stored for power, and that is equivalent to an average of 7.2 million acre-feet.

Now I want to answer Congressman Budge's question.

Mr. BUDGE. This is an extremely technical subject for those people who are not engineers, and I think the committee is probably more interested in your conclusions rather than the steps you used to reach those conclusions.

Mr. HOUSTON. That is my intention.

I said just a moment ago we only needed 7.2 million acre-feet for power in the whole Columbia River Basin. That is not the total answer. You still have the problem of control of the 1894 flood, which had 14 million acre-feet of water in the crest of the flood above 800,000 second-feet. In other words, if you had perfect operation of flood con-

trol, you would need 14 million acre-feet of reservoir capacity to control the flood.

But you have a greater problem than that. Upstream you need local flood control at such points as Bonners Ferry on the Kootenay, on the Clark Fork above St. Regis, in the Clearwater River Basin below Penny Cliffs; and to accomplish that you need somewhere between 22 and 25 million acre-feet to give you the whole value.

Now, gentlemen, with 14 million acre-feet of storage in the basin and an ultimate requirement of 22 to 25 million, we should be very careful where we place any storage in the basin because it is at a premium.

You must have 3 goals when we choose a storage reservoir: 1 is local flood control; 2 is flood-control benefits downstream; the third is storage for power.

Now, I have shown you here a chart, figure XXII–1, which compares high-head Hells Canyon streamflow with the streamflow at the Penny Cliffs project on the Clearwater River. In that previous chart figure VII, I showed you that the hydro was pushed up in your load curve in the low-flow period, and that is what Idaho Power Co. has provided for in the ultimate design of their project, a hydraulic capacity of 30,000 second feet.

If you take this average flow of 15,000 second-feet at Oxbow during this period and put it through the wheels in 12 hours a day, you put it up to 30,000.

Now, let's look for a moment at the conditions that exist at Penny Cliffs. An average flow of about 2,500 cubic feet per second, but a tremendous flood during the snow-melt period, and the Army engineers have chose 10,000 second-feet as the ultimate hydraulic capacity. We store 1.26 million acre-feet, release that in the low months and load-factor it to 12 hours a day, and we come back to the 10,000 c. f. s. hydraulic capacity.

In other words, it is floods like that at Penny Cliffs that need to be stored.

Elsewhere in the basin storage needs are 1.7 million acre-feet on the Clark Fork in Montana above St. Regis. There is needed about 4 million acre-feet on the Kootenay. There is about 3 million acre-feet—no; a total of 4 million acre-feet—on the combined north and south forks of the Clearwater River. Those are the locations where you need your storage.

Now, let us consider for just a moment operation in 1985.

If you filled high-head Hells Canyon Dam, you would not draft it under any condition except for a flood of the type of 1894, which occurs once in about 90 years, because there is no water that would be spilled. Since you are operating your hydro for maximum energy, you hold the head up at all times. So the reservoir would not be used. It is only when you locate storage such as Penny Cliffs that you would have any reason at all to draft storage, and then only a forecast basis where the snow survey shows you excessive runoff to come.

Now, then, high-head Hells Canyon Dam has been figured to cost—with 13 units so as not to block the river. That is a minimum number of units and the design that we saw yesterday will have to be changed to allow for 13 units—$454 million, or 4.95 mills per kilowatt-hour, based on the ultimate depleted flow of the Snake River.

Mrs. Pfost, I would like to say that your questions yesterday were extremely relevant. Either the high dam or the low dams can operate

perfectly satisfactorily on the depleted flow of the river for the reason that with steam electric generation on the system you will never draft the reservoir. You will always operate it full, the same as you will Grand Coulee, at maximum head to get maximum energy and maximum load-carrying ability, and, if you are short of water, you will reduce the hours of operation of the project rather than draft the head.

The corresponding figure for the 3 low-head projects, as proposed by the Idaho Power Co., is 1.98 mills per kilowatt-hour.

Mr. BUDGE. Compared with what?

Mr. HOUSTON. 4.95 mills for the high dam operated as a run-of-river project, as it will be starting sometime between 1970 and 1975. From then on it would never be drafted.

My Governor is not interested in who builds Hells Canyon. He is only interested in what is built in the canyon. He is interested in the economics of the problem.

If the same method of incremental calculation is applied in the case of Mica Creek in Canada that has been applied the last 2 days in connection with the figuring of the value of high-head Hells Canyon, the States of Oregon and Washington will pay Canada about $30 million a year for storage that ceases to have value after 1975.

Mr. WESTLAND. What is the estimated cost of Mica Creek?

Mr. HOUSTON. Dr. Raver offered to give the Canadians a dam at Mica Creek if he had the privilege to draft storage that would cost $250 million.

The same thing applies in the State of Montana to Paradise, a great big monumental type of proposal that would never be drafted.

It is extremely difficult for the International Joint Commission, while they are in conference with the Canadians in an effort to settle the problem, to have the Canadians take our own incremental method and hand it back to us and say: "These are your figures."

I was present in Vancouver, British Columbia, when Jean Lesage, Minister of Northern Affairs and National Resources, made his talk, and I have included in the back of my statement here as appendix A a copy of Mr. Lesage's speech.

He said:

> The Ottawa government—and I am speaking for them—is interested in getting their share of downstream benefits.

When we assign to high-head Hells Canyon the full downstream benefits at the next added project 3 years after the date of completion and claim that those benefits extend for 50 years, it makes it extremely difficult for us to deal with the Canadians and hope to get Libby at any reasonable cost for the development of any upstream storage.

Now the interesting part about Mica Creek, the Canadians would be foolish to accept the free dam for $250 million, because as soon as they run out of their share of this hydro we are going to begin to build steam, and if they draft the head on their hydro projects, its cuts the value—I figured it through—to 35 percent of the capacity value that the project should have.

Mr. ASPINALL. The time of the morning session has expired.

The committee will stand adjourned until 9:45 tomorrow morning.

(Whereupon, at 12:01 p. m., the subcommittee recessed, to reconvene at 9:45 a. m., Friday, July 15, 1955.)

HELLS CANYON DAM

FRIDAY, JULY 15, 1955

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON IRRIGATION AND RECLAMATION OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 10:10 a. m., in the committee room, New House Office Building, Hon. Wayne N. Aspinall (chairman of the subcommittee) presiding.

Mr. ASPINALL. The Subcommittee on Irrigation and Reclamation will now be in order for the further consideration of H. R. 4719 and similar bills.

Yesterday the Chair failed to get unanimous consent to include the following statements in the record:

The statement of F. P. Champ, speaking for the United States Chamber of Commerce. His statement is in opposition.

The statement of the Buffalo, N. Y., Chamber of Commerce, in opposition.

The statement of C. E. Huff, manager of the National Farmers Union Resources Corp.; the statement of Frank N. Calvin, manager, fertilizer department, Farmers Union Central Exchange, Inc.; the statement of James G. Patton, national president of the Farmers Union, which are in support.

The Chair would ask at this time that unanimous consent be given to place these statements in the record at the appropriate place; that is, at the end of the testimony given for those in support and those in opposition.

Is there any objection?

Hearing none, it is so ordered.

At this time the Chair would like to have permission to call to the witness table Mr. Bernard Williams, of Boise, Idaho, who is vice president of Morrison-Knudsen. The reason for this is that Mr. Williams must leave, and the Chair asks for his testimony to be taken at the present time and then cross-examination will be had following the statement and before we ask Mr. Houston to return to the stand.

Is there any objection?

Hearing none, it is so ordered.

Mr. Williams, will you please take the chair at the witness table and present your statement?

STATEMENT OF BERNARD WILLIAMS, BOISE, IDAHO, VICE PRESIDENT, MORRISON-KNUDSEN CO., INC.

Mr. WILLIAMS. My name is Bernard Williams. I reside in Boise, Idaho. I am vice president and director of Morrison-Knudsen Co., Inc., contractors and engineers.

Morrison-Knudsen Co. is one of the largest contracting companies in the world, with international experience in the construction of dams and hydroelectric projects. Our experience includes numerous large projects in the United States and many foreign countries, in addition to which we have been joint-venture participants in numerous projects, including Bonneville, Grand Coulee, Boulder, Garrison, Ross, and Hungry Horse. Morrison-Knudsen has also constructed many projects in foreign countries, including Canada, Brazil, Mexico, Labrador, Ceylon, Afghanistan, Turkey, and Iran. Likewise, we have had much experience in Idaho, particularly on the Snake River, where we have since 1946 built the Idaho Power Co.'s six most recently constructed projects, the upper and lower Salmon, Bliss, upper and lower Malad, and Strike plants.

My particular responsibility is the division of dams and hydroelectric construction. I have been continuously engaged in various phases of dam-construction work for the last 30 years, starting in 1923 with the Bureau of Reclamation and thereafter with the Morrison-Knudsen Co.

I was in charge of all construction work on Boulder Dam, first as assistant general superintendent, and later as general superintendent of all construction. I have, over the years, been in charge of the actual construction work on many dams. During the past 20 years, since making an estimate on Grand Coulee Dam in 1933, I have sat in on and helped establish every bid made by the Morrison-Knudsen Co. on major dam jobs.

Referring particularly to the plants we built for Idaho Power Co., we made independent estimates of the quantities, unit prices, and the costs of these projects in just as great detail as had the Idaho Power. The upper Salmon was started in October 1945 and was completed in November 1947. The lower Salmon was started in August 1946 and was completed in May 1949. The upper and lower Malad projects where started in 1946 and completed in 1948. The Bliss project was started in April 1948 and was completed in May 1950. The Strike plant was started in November 1950 and was completed in June 1952.

Our estimated cost of these 6 projects was $48,943,042, and the final cost was $48,752,178, or an underrun of thirty-nine hundredths of 1 percent.

Referring specifically to the Hells Canyon stretch of the Snake River, I personally, and the engineers in the company, have been studying different plans for developing this reach of the Snake River since 1948. The first investigations and estimates we made were in connection with the Bureau's proposed high dam. We were requested to determine what length of time would be necessary for the construction of this project under the Government's speeded-up power program. Since that time, we have studied both independently and with the Idaho Power Co. engineers many combinations of dams to develop this stretch of the river in order to determine the best and

most economical method of development. As a result of these studies, it is my firm opinion that the three dams as proposed by the Idaho Power Co. are the best method of development.

During the past 4 years, we have spent more time investigating and estimating the cost of these 3 dams than any other dams we have ever bid on.

I made an independent appraisal of the cost of each of the 3 dams, bringing into this work the intimate knowledge of the sites resulting from personal investigations and by our engineers. These independent estimates were made in as great detail as those of the Idaho Power Co. Our estimate for the Brownlee project was $63,782,519; Oxbow, $23,386,633; and for Hells Canyon, $45,474,401; or a total of $132,643,553 for the 3 projects.

The Idaho Power Co. estimate for the 3 projects is slightly higher, $133,000,000.

At the hearing before the Federal Power Commission in July 1953, I testified in detail as to the methods followed in the preparation of these estimates, and it was my unqualified judgment that the costs determined by the company were realistic and valid.

To confirm our estimates, I testified at that time that I was authorized, and I did then and there, express on behalf of my company an unqualified offer to enter into a firm contract to construct these complete projects for $133 million. I stated that this unqualified offer would be valid for at least 1 year.

Approximately 1 year later, on June 29, 1954, I again testified in rebuttal and I renewed this offer, and with reference to the time limit of the offer, I stated that if all 3 dams could be started within 2 years and completed within a period of 5 years, we would still be willing to make the offer.

I may add that at the time I appeared in rebuttal in June of 1954, the Federal Power Commission staff witnesses had already testified and had arrived at a much higher cost estimate than either ours or the Idaho Power Co.

In view of this discrepancy, our company reviewed, checked, and cross-checked our estimates and schedules. I had almost every competent engineer in our organization recheck those estimates when they were not assigned to something else. They were checked and rechecked by as many different persons and by as many different methods as they possibly could be. Furthermore, I spent much additional time in the canyon examining the sites and the availability of material and plotting the location of access roads. We were still of the firm opinion that the 3 projects could be constructed for $133 million.

So again, we made a firm offer to build these 3 projects for $133 million. Almost a year later, in May of this year, I stated before the Senate subcommittee at the hearing on S. 1333 that I was authorized on behalf of my company to again make an unqualified offer to enter into a firm contract to construct these 3 projects for $133 million, and I did make such offer. And now, I state before this committee that I am authorized on behalf of my company to again make an unqualified offer to enter into a firm contract to construct these 3 projects for $133 million.

67129—56——18

To make this clear, our company is willing to enter into a firm and unqualified "turnkey" contract to build these projects, and turn them over as complete and going plants for $133 million.

We also made a careful study of the company's construction schedule. If construction began at Oxbow before the 1st of August, the first unit would be on the line within 12 months, and the remaining units on the line within 16 months. Power from Brownlee could be on the line in 24 months from the start of construction and would be complete in 30 months. Power from Hells Canyon would be on the line within 24 months from the start of construction and could be completed in 38 months. Furthermore, if these projects were constructed concurrently there would be a reduction in the overall costs of at least 3 to 4 percent. I believe this construction schedule to be entirely realistic.

In the normal course of conducting our business, we keep abreast of proposed new dam construction throughout the world, and particularly in the Pacific Northwest. There are, to my knowledge, no projects in the Pacific Northwest which can put so much power on the line so quickly, or at such a low kilowatt cost.

In comparison to this, our investigations and studies of the single dam, as proposed by the Bureau of Reclamation, show that it would take at least 4½ years to start power production and a minimum of 6 years to complete the project.

The construction problems involved in building a dam at the site proposed by the Bureau make it one of the least desirable sites in this stretch of the river. Even the site chosen by the Idaho Power Co., a few hundred feet upstream, so completely changes and lessens the problems involved, that on 1 item alone, that of construction access, 4 to 6 million dollars can be saved. Our estimates for the single dam show that the cost of this project will be at least as much as that estimated by the Bureau, $356 million.

Hungry Horse Dam was constructed by a joint venture of which Morrison-Knudsen Co. was a substantial part. I personally influenced the bid downward. Any application of unit prices at Hungry Horse to the rugged Hells Canyon Dam would be unrealistic, to say the least. They are in no way comparable. Access to the powerhouse at Hells Canyon would cost more than the construction of the Hungry Horse powerhouse. Taking this into consideration, any bid which we make on the single dam project would probably be more than the Bureau's estimate.

We have during the past years constructed many of the dams and hydroelectric projects in the Pacific Northwest for the Bureau of Reclamation, the Army engineers, and private companies. We take a certain pride in our work and we watch the use and development of these projects in the years after. From these observations I have developed several firm convictions.

The following reflects my views personally and does not necessarily represent the thinking of Morrison-Knudsen Co., although the company certainly is not in disagreement with it.

Anything less than 100 percent conservation of our soils and water cannot be justified and should no longer be tolerated. No water should run into the oceans without first having been used to its feasible maximum. If this is our goal, and I am convinced it should be, the high Hells Canyon would not fit into any comprehensive plan.

Storage must begin at the headwaters if we are to use the runoff water to its maximum. Further, if all of our irrigable land is to be irrigated, the maximum amount of water must be stored at the maximum elevation. I am certain that in any study of a really comprehensive plan, the planning division of the Bureau would come out with the conclusion that the high Hells Canyon would not fit into any comprehensive plan for the feasible complete development of either the Columbia or Snake River Basins.

Congress has never authorized the Bureau to come up with a feasible plan for the complete development of the Snake. They have had to proceed with an outmoded feasibility formula. Many arguments have been advanced as to the downriver benefits that would accrue from the additional storage available from the high Hells Canyon over and above that accruing from the three-dam plan. The same arguments hold true for headwater storage over high Hells Canyon located in the middle reach of the Snake. An equivalent amount of storage at the headwaters is available at approximately 65 percent of the cost of the high Hells Canyon storage, and with many times the benefit to flood control and irrigation.

If the Congress would realize that ultimately we must cultivate and conserve all of our lands suitable for such purposes, that we must develop our maximum hydro potential and that we cannot afford or tolerate floods, a comprehensive plan is evident.

The three dams proposed by the Idaho Power Co. fit in any such plan; the high Hells Canyon is immediately eliminated.

It is my firm conviction that money spent by the Government for the storage of water should be used for those upstream developments where the floods are caused and where it benefits will be greater.

Thank you.

Mr. ASPINALL. Thank you, Mr. Williams.

The Chair recognizes the gentleman from Texas, Mr. Rogers.

Mr. ROGERS. I have just 1 or 2 questions.

Mr. Williams, as I understand, the Bureau of Reclamation also made some estimates concerning the construction of the three low-water dams as compared with the high Hells Canyon Dam. Are you familiar with those estimates?

Mr. WILLIAMS. I am.

Mr. ROGERS. Mr. Williams, what is the substantial difference, if there is any, between the type of dam that you propose to build and the type of dam that the Bureau of Reclamation used in making their estimates, that is, of the low-water dams?

Mr. WILLIAMS. In general, theirs are mass concrete gravity dams, which are not the cheaper dam to build within the canyon and are not better than many other types of dams that could be adopted. But because of the lack of materials to build a concrete gravity dam in this area, the cost necessarily goes up.

I believe also that they apply unit costs based upon unit costs in some other job that some contractor has built for them, with not too much consideration given as to the cost in the particular dam that you are building.

Mr. ROGERS. What is the difference between your estimate of cost of these low dams and the estimate of the Bureau of Reclamation?

Mr. WILLIAMS. I have forgotten the figures but it is in the neighborhood of $100 million.

Mr. ROGERS. That was the thing that interested me—the type of dam that you propose to build. Do you mean it would be a cheaper structure insofar as——

Mr. WILLIAMS. It would be a better structure in that maintenance would be lower, but it is adapted to the material and the sites that are there. It is just obvious that the types of dams that we propose, or that Idaho Power proposes, are adapted to these particular sites because of availability of material and the natural way that the land lies. It is just a cheaper job to build.

Mr. ROGERS. In other words, there would have to be materials imported that you would not have to import?

Mr. WILLIAMS. That is correct.

Mr. ROGERS. Could the high dam be built of the same materials you propose to build your low dams out of?

Mr. WILLIAMS. I would say "No." They very definitely could not be. The amount of material is not available for that much of a structure.

Mr. ROGERS. One other question. What is the potential power production of the three lower dams as compared with the potential power production of the high dam?

Mr. WILLIAMS. In the immediate future—and by "immediate" I mean in the next 4 or 5 years or 6—there is actually slightly higher in the high dam. In the long haul—and by "long haul" I mean in 6 or 7 years—Idaho Power Co.'s proposal becomes equal and eventually becomes greater as more land is put under cultivation upstream, which has to be done.

Mr. ROGERS. The thing I am talking about is this: whether or not the three-dam project will bring about the ultimate use of the greatest amount of energy or whether the high dam will bring about the ultimate use of the greatest amount of energy.

Mr. WILLIAMS. Ultimately the low dams would develop more. They would develop the fullest amount that could possibly be available in 5 or 6 years. The only difference in the two things is in the amount of storage. In the proposed Bureau high dam the proposal is to store some 3½ million acre-feet down in the middle reaches of the river, which should be stored in the upstream end of the river where it could first be used for flood control and irrigation and then come through all the plants down the river, through all the plants on down the Snake, and on down the Columbia. Storing it in the middle of the river is obviously, to me at least, not the place to put it.

Mr. ROGERS. Mr. Williams, are you a stockholder in the Idaho Power Co. yourself?

Mr. WILLIAMS. I am not.

Mr. ROGERS. Is your company a substantial stockholder?

Mr. WILLIAMS. No, our company owns no part of Idaho Power Co. in any way, shape, or form.

Mr. ROGERS. Any of your directors?

Mr. WILLIAMS. To the best of our knowledge—I am certain no directors. We have no employees, to the best of my knowledge, who own any stock in Idaho Power Co.

Mr. ROGERS. One other question and then I will quit. Do you know whether or not there has been any proposal to pay any governmental agency, whether it be the Federal Government or the State,

for the use of this particular stream from which the original energy flows that you get your power from?

Mr. WILLIAMS. Not that I know of. I am not aware of it at least.

Mr. ROGERS. In other words, if the Idaho Power Co. or any other power company used that stream, they would be using the energy stored free of charge; would they not?

Mr. WILLIAMS. I would assume they would. If they were not, they would have to add it to the rate in the end. But I am not qualified to talk on it.

Mr. ROGERS. I understand that is an argumentative question, whether or not the taxpayers in the end get the benefit of that. But I just wanted the record to show that. Thank you very much.

Mr. ASPINALL. The Chair recognizes the gentleman from Nebraska, Dr. Miller.

Dr. MILLER. You made a very fine statement, Mr. Williams. I wanted to ask two questions relative to the low dams.

In your opinion, would they provide water for irrigation more than the high dam?

Mr. WILLIAMS. No.

Dr. MILLER. I think the statement we have here from the Department is that Hells Canyon Dam is not contemplated to supply any water for irrigation.

Mr. WILLIAMS. It is not. The only point I am endeavoring to make, Congressman, is that we do need the water stored upstream for future irrigation. If and when that is done, and that should be in the near future, there is not water available to fill the high Hells Canyon Reservoir.

Dr. MILLER. Then the three dams would eventually be in position to supply more water for irrigation as well as power?

Mr. WILLIAMS. That is correct, and flood control.

Dr. MILLER. And the cost here you said is $133 million for the three low dams?

Mr. WILLIAMS. That is right.

Dr. MILLER. And the cost is $356 million for high Hells Canyon Dam?

Mr. WILLIAMS. That is correct.

Dr. MILLER. Which makes a difference of $223 million if my arithmetic is correct.

In 10 or 15 years, how much power would you generate from the 3 smaller dams in relation to the high dam over a year's time?

Mr. WILLIAMS. In a 10-year period, you would develop just as much from the 3 low dams as you would from the high Hells Canyon Dam. In the earlier stages, and depending of course on the runoff by the year, you get a relatively small amount more from the high Hells Canyon Dam than you do from the 3 low ones, but in 10 years it would be equalized.

Dr. MILLER. And your estimate to construct the high Hells Canyon Dam would be about the same as the Bureau figures—$356 million?

Mr. WILLIAMS. That is correct.

Dr. MILLER. As I understand it, in constructing a high Hells Canyon Dam, in order to get the full benefit out of it you also have to develop some dams downstream that have been authorized but no construction work has started. Is that true also of your three smaller dams?

Mr. WILLIAMS. No, sir. The three small dams can stand entirely on their own feet with nothing entering into the writeoff of them from downriver benefits.

Dr. MILLER. Can you have all three of them built and in operation in—is it 3 years' time?

Mr. WILLIAMS. Yes, sir.

Dr. MILLER. High Hells Canyon looks like it would take what?

Mr. WILLIAMS. Six years.

Dr. MILLER. And then before you get the benefits out of it, you still have to do the work downstream in order to realize the benefits?

Mr. WILLIAMS. To pay for it on the formula that has been established; that is correct.

Dr. MILLER. Thank you.

Mr. ASPINALL. The Chair recognizes the gentlewoman from Idaho, Mrs. Pfost.

Mrs. PFOST. Mr. Chairman, I would like to ask Mr. Williams: Are the Idaho Power Co. powerplants inside buildings or are they outside buildings?

Mr. WILLIAMS. They are outdoor-type powerhouses, which nearly everyone is going to at the present time, including the Federal agencies.

Mrs. PFOST. Mr. Williams, has the Idaho Power Co. accepted this bid of yours of $132,643,553?

Mr. WILLIAMS. The offer was $133 million, but they have not accepted it.

Mrs. PFOST. Thank you very much. That is all.

Mr. ASPINALL. The Chair recognizes the gentleman from Pennsylvania, Mr. Saylor.

Mr. SAYLOR. I would just like to congratulate you on your statement and ask you this question: Am I correct in reading the first page that you went to work for the Bureau of Reclamation in 1923 and worked there for at least 10 years?

Mr. WILLIAMS. No, sir. I worked for them—Guernsey Dam was started in 1924. I did not know it read that way. Maybe it does. But anyway, from 1923 on I worked for the Bureau 1 year. I worked for them during summers as a kid during vacations. After 1923 I worked for the Bureau approximately 1 year.

Mr. SAYLOR. And were you an employee of the Bureau when you worked at Boulder Dam?

Mr. WILLIAMS. No, sir; contractor.

Mr. SAYLOR. That is all.

Mr. ASPINALL. The gentleman from North Carolina, Mr. Shuford.

Mr. SHUFORD. I reserve my time.

Mr. ASPINALL. The gentleman from South Dakota, Mr. Berry.

Mr. BERRY. I would yield my time, Mr. Chairman, to the gentleman from Idaho, Mr. Budge.

Mr. ASPINALL. Mr. Budge.

Mr. BUDGE. Mr. Williams, I have only one question. Idaho Power Co. would hardly be in position to accept your offer until the Federal Power Commission granted them the authority to build the dam?

Mr. WILLIAMS. That is correct.

Mr. BUDGE. If either of these proposals are authorized either by the Federal Power Commission or by the Congress, would your company in all probability bid on either proposal?

Mr. WILLIAMS. Yes, sir.

Mr. BUDGE. So you would have no financial interest in building the Idaho Power Co. dams over and above a financial interest you might have in building the Bureau plant if that were adopted, would you?

Mr. WILLIAMS. That is correct.

Mr. BUDGE. I would like to just comment briefly. The three-dam plan has been referred to as the "little dams." Would you just tell us briefly what the size of these dams would be that you offered to build for $133 million?

Mr. WILLIAMS. The term is relative. Brownlee itself is the largest of the 3 and is a major structure, extending some 385 feet, I believe it is, above the streambed. I know it extends a hundred feet below. Of that I am very certain. It is a major structure, exceeded I think by only 14 dams in the world. Therefore, it is a major structure.

Hells Canyon is the next in height, also a relatively high dam, nothing approaching, of course, high Hells Canyon, which compares with Boulder, but still only exceeded by some 22 or 24. It is still a major structure.

Oxbow Dam is relatively low in some ways, still being approximately twice as high as Bonneville. But Oxbow happens to be a particularly cheap site. I am certain it is the cheapest potential site existing now or that has existed in the past in the entire Northwest, a job that can be done cheaper than any job, I am certain, that has been put under construction to date. Part of that is for the reason that even before my time, which is a long time ago, some predecessor company started a power project there and actually generated power there, putting in what they used for a penstock tunnel, which can now be used for a division tunnel, making the period of time necessary for construction, as well as the cost of construction, very low. It is just the best thing that there is any place that I know of, and I am familiar I think with every hydro site, at least in the Northwest.

Mr. BUDGE. When you speak of conservation of the natural resources both at this location and upstream, to what do you particularly refer upstream?

Mr. WILLIAMS. The Bureau over a period of years has on money that has been appropriated by Congress investigated sites. The immediate site, the one that must be done immediately, is the reregulating dam below Palisades which is—I have all this information, but this is from my memory—350,000 acre-feet of storage. It has to be constructed for feasible operations of the Palisades Dam. You just cannot operate without it.

Mr. BUDGE. Where is it geographically speaking with relation to the Hells Canyon reach of the river?

Mr. WILLIAMS. In distance it is approximately 200 miles upstream. In elevation, which is much more important, it is approximately 1,530 feet in elevation upstream.

Mr. BUDGE. It is clear across the State of Idaho over here on the other side, is it not?

Mr. WILLIAMS. It is above all the irrigable land that needs to be put under irrigation in the State of Idaho; yes, sir.

Immediately upstream above Palisades is one very economical site, or it is economical to me at least. There are two on the North Fork.

There are 7 dams, starting with the 1 that I first enumerated on upstream that have a million and a half acre-feet of storage in them that can be developed for so much less money than this additional storage in Hells Canyon Dam which is clear down below any of the irrigated land. This 65 percent figure is too high. It is a conservative figure.

Mr. Crandall, watermaster for water district No. 36, has a proposal to store water underground, which would be south and west, I guess it is, of Idaho Falls. I know where it is, but I do not remember my directions. This to me is the most feasible thing for storage of water that anyone ever saw or heard of, because God regulates outflow. It can go in pretty fast, but it only goes out about so fast. It has to come out of all the springs. It flattens out any flood that you put on that land, and that one is really cheap. It is less than 10 percent of the cost of storing water in the high Hells Canyon Dam.

Mr. BUDGE. And if it were stored at the upper elevation, it could be used for irrigation, for flood control, for the production of power as it passes all through the State of Idaho before it ever reaches this area, could it not?

Mr. WILLIAMS. It certainly could. To me, one of the things that worries me very much now is our increase in population, which scares me to death, and the little amount of land that we got. We have an overproduction today, but 5 years from now or 6 years from now we will not be as bad off as Japan, but we are approaching it if we do not do something about it. I often wonder if the people and the Congress realize how long it takes to put these irrigation projects into production. I think it is just imperative that we have land available as we need it.

Now, maybe we would not start irrigating it immediately, but let us have it available. We stockpiled stuff for the war. To me the two things, being able to produce food and being able to produce power—I would like some of that stockpiled.

Mr. BUDGE. You need not only the land but you need to preserve the water for the land?

Mr. WILLIAMS. That is right. We cannot waste any more. We have wasted it and it is past time we preserved it. We just cannot tolerate any more in our economy in my opinion.

Mr. BUDGE. I yield back.

Mr. ASPINALL. The Chair recognizes the gentleman from Oklahoma, Mr. Edmondson.

Mr. EDMONDSON. Mr. Williams, I certainly want to agree 100 percent with your statement that calls for 100 percent conservation of our soils and waters and stating that you do not believe that floods ought to be tolerated any more. I am a little surprised that you qualified that by saying that that is your view personally and not necessarily the thinking of your company because I think that happens to be the thinking of most of us.

Mr. WILLIAMS. I think probably it is. I mean by that I have not discussed it with our board of directors or with our president, which I did this matter of putting the ceiling price on the job, which happens to be not quite in accord with our policy of guaranteeing an overall cost of a project. We bid projects on unit-price bases. So that part I had discussed, but I did not discuss this latter part.

Mr. EDMONDSON. You made the point in your statement that the Hells Canyon Dam is not a part of any comprehensive plan. I would like to know what comprehensive plan for the Snake River development you can identify your three dams with.

Mr. WILLIAMS. My three is based on this assumption: That if you take as a goal that no water can run off to the ocean that has not been used, and that you cannot have floods, that all land that is irrigable must eventually be irrigated, to where you have the complete use of all the runoff water there is on the river, then Hells Canyon Dam could never have more than a million acre-feet of water available for storage because it is being stored on up river during the flood season, which has to be used for the irrigation processes. The whole thing is flattened off clear on down the river to where there is not water available to fill that reservoir.

Mr. EDMONDSON. I can understand your criticism of Hells Canyon Dam, and it may well be a valid one, but I would still like for you to answer my question if you can. What comprehensive plan has been developed that your three dams are part of?

Mr. WILLIAMS. Probably only a personal one, as far as I know.

Mr. EDMONDSON. Your own personal one.

Mr. WILLIAMS. I started with the 308 report, which, by the way, I consider an excellent piece of data from which to base anything on.

Mr. EDMONDSON. Has that report been made a part of our record or files?

Mr. WILLIAMS. I do not know. I imagine maybe it has. Anyway, it is one gotten out by the Army, and over a period of years since that time we have had opportunities to check the data that is in that thing, and we found it is very complete and very accurate.

Mr. EDMONDSON. Does that include a comprehensive plan for the entire Snake River Basin?

Mr. WILLIAMS. No, sir. It includes a comprehensive plan for flood protection for the city of Portland.

Mr. EDMONDSON. May I ask a further question? I was interested in your testimony regarding material and the fact that you were going to use materials on the scene, and I think that it would be helpful to the committee to know just what materials you are proposing to use in the construction, if it is not a trade secret.

Mr. WILLIAMS. It is not. In general it would be rock-filled type dams, and the material for the structure is taken out of the excavations unless you get down to the river, or borrowed from the natural materials lying in the vicinity of the dam.

The main structure, the big one, is a concrete dam, and there is no source of aggregate short of the Imnaha River in the vicinity of Joseph, Oreg., or upstream at a porous site. This lime formation is approximately 18 miles upstream. You would have to crush aggregate to make the concrete area.

Mr. EDMONDSON. Then what percentage of your dam would be in rock fill and what would be concrete?

Mr. WILLIAMS. The dam itself is all rock fill. The appurtenant structures, the spillway of powerhouse, of course, are concrete, but the dams themselves are not concrete, they are rock-filled dams.

Mr. EDMONDSON. I would certainly agree with you there are places

where materials other than concrete can be used to very good advantage. I have seen some earth-filled dams in our section that have been very successful.

Mr. WILLIAMS. That is right. I think without exception it is the thinking of both the Bureau and the Army that earth-filled and rock-filled dams are actually more desirable than a concrete structure.

Mr. EDMONDSON. Were you present the other day when the Bureau witnesses testified that they had developed some new materials that were going to make a substantial saving in their estimate and reduce the cost figure to $308 million? Did you hear that testimony?

Mr. WILLIAMS. No, I did not.

Mr. EDMONDSON. I wonder if your figure of $356 million in your statement is based entirely on concrete or if it takes into account the use of substitutes or improved materials as were testified would be feasible the other day.

Mr. WILLIAMS. It does not, for this reason: That for a concrete gravity structure for a dam of that height—I cannot conceive of the type of structure being changed—why, there could be no substitute of materials. And I am familiar with every foot of land within 60 miles of Hells Canyon Dam site. I have put in more time in that canyon—of this I am certain—by many, many times than anyone in existence, Bureau or otherwise. I know that it is not available. In fact, I found the first source of aggregate for the Bureau of Reclamation.

Mrs. PFOST. Will the gentleman from Oklahoma yield?

Mr. EDMONDSON. I would be glad to.

Mrs. PFOST. Mr. Williams, I would like to ask you about the presently installed turbines the Idaho Power Co. has at the Oxbow site. Are they utilizing that site toady—those old turbines they put in there years ago?

Mr. WILLIAMS. No, they are not.

Mrs. PFOST. Since you are familiar with that area I thought you would be the person to ask this. Approximately when did they install those turbines in the Oxbow site?

Mr. WILLIAMS. It is before my time, which is quite awhile ago. I do not know when it was. The first time I am familiar with this site, it has not been generating power since. It has been used—I have forgotten the term—up to about 6 or 8 years ago, but actually as a generating unit it has not been in use and it could not be. It is outdated and outmoded.

Mrs. PFOST. But they did have turbines in the Oxbow site at one time and discontinued the generation of power there, did they not?

Mr. WILLIAMS. Yes. I think some power was actually generated. No dam was ever built at Oxbow. The only generation that occurred was from running a little jetty out under the river to divert a minor amount of water through this unit. I believe that was prior to the time that Idaho Power acquired that site.

Mrs. PFOST. Why did they generate power there for a time and then discontinue it? Do you know that?

Mr. WILLIAMS. I believe I do. It was because the demand for power in the immediate vicinity was in some of these mining operations that were later proven unsuccessful and abandoned. For a relatively small amount of power—by small amount I would guess maybe as much as 1,200 or 1,500 kilowatts—the thing could be operated as a run-of-river plant and could be used in the immediate vicin-

ity but would not justify transmission lines to take it to other sources than those in the immediate vicinity.

Mrs. PFOST. Thank you. I yield back.

Mr. EDMONDSON. I have no further questions.

Mr. ASPINALL. The gentleman from Utah, Mr. Dawson.

Mr. DAWSON. Mr. Williams, I just wanted to commend you for your statement on the upstream theory of putting these waters to storage so you could utilize them all the way downstream. I think that is a principle generally applicable to any basin; is it not?

Mr. WILLIAMS. I believe it is. Yes, sir.

Mr. DAWSON. Thank you, that is all.

Mr. ASPINALL. The Chair recognizes the gentleman from Missouri, Mr. Christopher.

Mr. CHRISTOPHER. Mr. Williams, I would like to compliment you on your attitude regarding the conservation of soil and water.

Mr. WILLIAMS. Thank you.

Mr. CHRISTOPHER. I agree with you 100 percent. With our rate of increase in population, which is doubtless going to rise over the years, we can scarcely afford to waste an acre-foot of our water or an acre-foot of our soil.

My first question is: How many acre-feet of water do you think should be impounded above the present Hells Canyon, in which 3 dams or 1 dam is proposed to be built? How many acre-feet of water in addition to that which is impounded now should be impounded above those dam sites?

Mr. WILLIAMS. I have all that information, Congressman. I believe it is approximately 5 million acre-feet.

Mr. CHRISTOPHER. Clear above any of these other sites?

Mr. WILLIAMS. Clear above Hells Canyon.

Mr. CHRISTOPHER. I mean above Hells Canyon but not including it.

Mr. WILLIAMS. Above that it is approximately 3½ million acre-feet.

Mr. CHRISTOPHER. In other words, those dams that are in existence now, in your opinion, should all be raised?

Mr. WILLIAMS. No, sir. New sites.

Mr. CHRISTOPHER. Build other dams?

Mr. WILLIAMS. Yes, sir; higher up. All the dams that I would build for storage are above any existing dam except Palisades and Jackson Hole which are are on up in the headwaters now. But all of them should be built above Idaho Falls, Idaho.

Mr. CHRISTOPHER. How many additional dams do you think should be built up there to make proper use of the water of the Snake before it gets down to Hells Canyon?

Mr. WILLIAMS. There are seven relatively small ones. Two of them are not too small either. The reregulating dam below Palisades and the one immediately above the Palisades Reservoir are the two major structures. I base my information on the report that I got from the Bureau on the acre-feet and the rest of it and by personal investigation of the dam sites arrive at a cost of these dam sites—the acre-feet of storage, plus this 1½ million acre-feet of storage of Mr. Crandall's idea in the plain around Idaho Falls, which goes down to the underground water table and out below. And any information that I have, that could be increased by twice that, could be 3 million acre-feet if you had the water to do it.

Mrs. PFOST. Mr. Chairman, would my colleague from Missouri yield at this point?

Mr. CHRISTOPHER. Surely.

Mrs. PFOST. I would like to ask you, Mr. Williams, what type of dams do you propose these should be? Should they be irrigation or power dams?

Mr. WILLIAMS. These upstream?

Mrs. PFOST. The upstream dams.

Mr. WILLIAMS. In general, they are storage dams for storing water above Idaho Falls so that the water can later be used for irrigation and the Mountain Home project and—I could not name all of them.

Mrs. PFOST. Do you propose that these dams should be Idaho Power Co. dams or do you propose they should be Bureau of Reclamation dams?

Mr. WILLIAMS. I do not propose which way they go. I know they can easily be justified and we cannot do without them. The reregulating dam—Congress has appropriated and the Bureau has spent money for the Palisades Dam. It cannot be an efficient operating unit until such time as the reregulating dam is built downstream from it. There is water available for storage for the next dam up and above Palisades Dam. Now I think that—who builds I am not prepared to state, but I know that it should be built. And the Hobar is one that definitely should go in. I have all the information on them. I got it from the Bureau and from personal observation of the sites.

Mr. CHRISTOPHER. What would be the potential generating power of those upstream dams in kilowatt-hours? How would they compare with the generation of the three dams proposed by the Idaho Power Co. at Hells Canyon?

Mr. WILLIAMS. In installed capacity the 7 upstream would be about 65 percent of these 3 dams. I have the exact figures, but I am quoting from memory.

Mr. CHRISTOPHER. I just wanted a close estimate.

Mr. WILLIAMS. Yes.

Mr. CHRISTOPHER. How many acre-feet of water at full head would these three dams proposed by the Idaho Power Co. impound?

Mr. WILLIAMS. Impound?

Mr. CHRISTOPHER. What would be the acre-feet of storage above the three proposed dams if and when they are constructed, approximately?

Mr. WILLIAMS. If operated strictly from a power basis, it would be about 1,100,000 acre-feet of storage.

Mr. CHRISTOPHER. 1,100,000?

Mr. WILLIAMS. Yes, sir.

Mr. CHRISTOPHER. How many acre-feet of water will the high dam impound full head?

Mr. WILLIAMS. Usable storage, based on the drawndown that I would assume, 3,800,000.

Mr. CHRISTOPHER. 3,800,000 acre-feet?

Mr. WILLIAMS. Yes.

Mr. CHRISTOPHER. In other words, the high dam will impound three times as much water as the three low dams?

Mr. WILLIAMS. That is correct, if you had the water to fill it.

Mr. CHRISTOPHER. Is it not a fact that over 66⅔ percent of the storage water that comes down Hells Canyon would just pass unused down to the next dam in the Columbia River in case the three dams

are built instead of one? Are we not wasting 66⅔ percent of the generating potential in Hells Canyon if we build the three low dams instead of the high one?

Mr. WILLIAMS. You are not wasting anything. They generate the same amount of power.

Mr. CHRISTOPHER. What happens to the 66⅔ percent of storage if you do not keep it up there?

Mr. WILLIAMS. To operate Hells Canyon at maximum and, say, you are going to use up that 3½ million acre-feet of storage every year, you would never fill it back up again.

Mrs. PFOST. Would the gentleman from Missouri yield again?

Mr. CHRISTOPHER. Surely.

Mrs. PFOST. Mr. Williams, you said just a moment ago, if you had the water. I have here a table before me that Mr. Riter included in his testimony. It shows that the discharges at Hells Canyon Dam site in the lowest year shown from 1911 through 1953 is 8,081,000. I presume that is acre-feet.

Mr. WILLIAMS. Yes.

Mrs. PFOST. And you have just testified that you would impound approximately 3½ million additional in upstream dams, and the high Hells Canyon Dam would take approximately 4 million acre-feet. So the very lowest recorded flow would have more than filled the high Hells Canyon Dam at any time. The highest flow is shown at over 20 million.

Mr. WILLIAMS. Congresswoman, I am certain of my figures and I am certain there has been enough study made of it and evidence before the Federal Power Commission, based on the Army, the Bureau, the Federal Power Commission's own studies, and everyone else's studies, and I am quite certain that with a million and a half acre-feet upstream storage alone, this million and a half as proposed by Mr. Crandall, that if you drew Hells Canyon down each year you could not expect to fill Hells Canyon only once in 25 years. Now I have all the figures. To quote from memory is a little difficult for me to do. But these figures are all on record at the Federal Power Commission. They are sworn testimony and they are a matter of record. It is something somebody would have to take out. To pick them out of the air, I am unable to do so at this time, but I know Hells Canyon would not fill but once every 25 years.

Mrs. PFOST. That is very hard to believe when we consider that in 42 years the flow of the river has only dropped below 10 million acre-feet 6 times and the balance of the time it has run from over 10½ million to over 20 million acre-feet each year. These are figures that have been taken at the Hells Canyon site by the Department. So it is very difficult for me to understand how the high Hells Canyon Dam would fill only once in 25 years when there is such a large discharge every year.

Mr. WILLIAMS. There is not. Of that I am certain. That is a matter of record that can easily be ascertained.

Mrs. PFOST. Mr. Chairman, at this point then I would like to ask permission to include in the record the Department's report of the Snake River flow for each of the years. I do not have it here, but I would like for that portion which shows the flow of the Snake River for all of the recorded years be made a part of the record. It is only a one-page item.

Dr. MILLER. Reserving the right to object, I think it is already part of the record.

Mrs. PFOST. It is a part of Mr. Riter's statement.

Dr. MILLER. Mr. Riter included it in his statement. It will be duplication.

Mrs. PFOST. It probably will be. I would like to check it.

Dr. MILLER. I have no objection if it is not in the record.

Mr. BUDGE. Reserving the right to object, and I shall not object, the Bureau of Reclamation witnesses have testified in this hearing that after the first few years they do not intend using more than an average of a million acre-feet of storage, which is what Mr. Williams is talking about. They have the 3,800,000 acre-feet capacity, but they do not use that every year. No one claims that.

Mr. ASPINALL. If it is not in the record, it will be admitted to the record unless there is objection.

Hearing no objection, it is so ordered.

(The document referred to is a part of the statement of Mr. John R. Riter, Chief Development Engineer, Bureau of Reclamation, Department of the Interior, Denver, Colo. See p. 27.)

Mr. ASPINALL. The gentlewoman will proceed.

Mrs. PFOST. Mr. Williams, I would like to quote to you the Federal Power Commission examiner's opinion after he had heard the more than a year's testimony, in which he said:

With ample allowance for all foreseeable upstream irrigation water uses, a dependable water supply can reasonably be expected for the efficient and economic operation of the high dam project during its payout period.

Mr. WILLIAMS. I read that. I believe that the Federal Power Commission staff has raised considerable objection to that, too. That is the examiner's opinion. Of that I am certain. I read it. Yes.

Mrs. GREEN. Will the lady yield.

Mrs. PFOST. Mr. Christopher has the time.

Mrs. GREEN. Will the gentleman yield?

Mr. CHRISTOPHER. Yes.

Mrs. GREEN. So we can weigh the testimony a little bit better, will you identify yourself, sir? Are you a construction engineer or a hydraulic engineer?

Mr. WILLIAMS. I am a construction engineer.

Mrs. GREEN. Then you are not an expert as far as riverflow is concerned? You do not place yourself in that category?

Mr. WILLIAMS. Based on certain information that is available, I do not know just how qualified I am, but I can still do arithmetic, and if I have the same source as the rest of you do, I qualify——

Mrs. GREEN. You are a construction engineer and not a hydraulic engineer?

Mr. WILLIAMS. Yes, I think so.

Mr. ASPINALL. Off the record.

(Discussion off the record.)

Mr. ASPINALL. Mr. Christopher.

Mr. CHRISTOPHER. Mr. Williams, how does the acre-feet storage at full head above Boulder compare with what would be stored by the high dam in the Snake?

Mr. WILLIAMS. I have forgotten how much storage Boulder has. It is probably 10 times the storage, though, from the Hells Canyon Dam. I believe it would be in that vicinity.

Mrs. GREEN. Will the gentleman yield?

Mr. CHRISTOPHER. I would like to ask one more question. In your opinion, would three low dams in the Colorado have been better than Boulder?

Mr. WILLIAMS. No, sir.

Mr. CHRISTOPHER. Thank you. That is all the questions I have.

Mrs. GREEN. Will the gentleman yield?

Mr. CHRISTOPHER. Yes.

Mrs. GREEN. You mentioned the 308 Report as an excellent report, and you then described it. Would you give me that statement again as having to do with the flood control for the city of Portland?

Mr. WILLIAMS. The purpose of the 308 Report was for a comprehensive plan to reduce floods to where they could be tolerated. The 308 Report started out with, first, how much water they could bypass Portland, and how could you keep from flooding Portland the cheapest way, by levees or by dams, or by a combination of the two. The purpose of 308 was, I believe, primarily a flood-control plan.

Mrs. GREEN. Is it not true that the 308 Report and the review report both were a study of a comprehensive development of the entire Columbia River Basin, that in that report they discussed irrigation, navigation, flood control, they discussed the Libby Dam, the Hungry Horse Dam, the Paradise, the Nez Perce, the Clearwater Dams, that it covered a great deal more than just flood control as far as the city of Portland is concerned?

Mr. WILLIAMS. That is correct. It started from this one point, but they did not have a plan or did not have a goal for the ultimate complete development of either the Snake River, the Columbia River, or any of the Columbia tributaries. It was not a complete development, which I say it is time we now have.

Mrs. GREEN. I was very interested in your comment that you considered it an excellent report. Is it not true in that 308 Report and in the review report that they made the statement that the high Hells Canyon Dam was the best dam that could be built in that area of the Snake River for the full and comprehensive development of the river as far as irrigation, flood control, navigation, and power were concerned?

Mr. WILLIAMS. That would not be my interpretation.

Mrs. GREEN. Mr. Chairman, may I ask consent to have that particular portion of the 308 Report inserted in the record at this point?

Mr. ASPINALL. You have heard——

Mr. WILLIAMS. I would like to explain that statement, if I might, because it did not ultimately develop the Columbia Basin, the Snake River Basin, or any other basin to the maximum possible. It developed it to the extent that kept the city of Portland from being flooded.

Mrs. GREEN. The 308 Report, however, is the report on which, for instance, the plans for Libby Dam have gone ahead; is that right?

Mr. WILLIAMS. Yes.

Mrs. GREEN. And they made recommendations which are so important to the full development of the rivers of the Northwest.

Mr. WILLIAMS. That is one of the most important there is in the Northwest today.

Mr. CHRISTOPHER. Mr. Chairman, I have one more question.

Mr. ASPINALL. Just a minute. Let us proceed in order. The lady has made the unanimous consent request that we have a certain part of this report [indicating] made a part of the record. The Chair is very desirous of knowing how much is to be placed in the record.

Mrs. GREEN. I certainly do not want it all included in the record. I am sure the committee knows that. It would not amount to more than three pages.

Mr. ASPINALL. Is there any objection to the request of the gentlewoman?

Dr. MILLER. Reserving the right to object, who will be responsible for the 3 or 4 pages? Will you do that?

Mrs. GREEN. Yes.

Mr. ASPINALL. The chairman will accept the responsibility.

Is there any objection?

Hearing no objection, it is so ordered.

(The document referred to follows:)

Excerpts from House Document No. 531, 81st Congress, 2d session, entitled "Columbia River and Tributaries, Northwestern United States. Letter from the Secretary of the Army transmitting a letter from the Chief of Engineers, United States Army, dated June 28, 1949, submitting a report, together with accompanying papers and illustrations, on a review of reports on, and preliminary examinations and surveys of, the Columbia River and tributaries, northwestern United States, made pursuant to several congressional authorizations listed in the report. In eight volumes: Volume 1."

REPORT OF THE DIVISION ENGINEER

(Pp. 41 and 42)

SYLLABUS

The potentialities of the Columbia River and its tributaries are so vast, and the physical circumstances for their regulation are so favorable that it is possible to develop economically feasible programs not only to meet fully the needs of this generation, but also to allow an ample margin for many years to come. A complete resurvey of the water resources of the Columbia River Basin, bringing up to date the previous comprehensive study of 1932, reveals major economic changes and population growth since that time and prospects of accentuated progress in the future. The river developments based upon the earlier plan and upon subsequent detailed studies of lesser scope have benefited and assisted development of the region in many respects. However, the tremendous water resources of the Columbia River still remain little used, and their natural fluctuations are still relatively uncontrolled.

With the changed conditions, floods on the Columbia River and its tributaries now cause appalling damages and flood control has become a matter of necessity. The present and potential unsatisfied demand for hydroelectric power has become a critical factor in the thriving economy of the Pacific Northwest, and further development of generating facilities is essential to provide for the needs of the region. Almost from earliest times, the developments of inland waterway navigation and of irrigation have been key objectives of regional development, and their continued extension and improvement is essential in a multiple-purpose program for the promotion of further regional development. Continued development of water resources also requires that attention be given to the preservation and rehabilitation of the fisheries resource, which in the past has been largely neglected.

The division engineer proposes a carefully integrated, comprehensive plan of development, consisting of a system of dams and reservoirs, hydroelectric generating facilities, transmission lines, irrigation works, levees, fish facilities, and other works. This plan embodies the recent and authoritative engineering plans

of other Federal agencies so far as are known, and their assistance, as well as that of State agencies, has been fully utilized in its preparation. Likewise, the implementation of the plan will require the participation of these agencies, each in its appropriate role. It is found that this system of projects, if properly operated, will accomplish desired regional objectives at less cost and with less interference to the present economy than any other practicable system. The specific accomplishments are:

A. Positive control of floods of the greatest magnitude known on the lower Columbia River, the Willamette, Kootenai, and Snake Rivers, and maximum protection economically feasible on other tributaries.

B. A fully developed channel for inland navigation on the Columbia and Snake Rivers, from Lime Point, Idaho, 30 miles above Lewiston, Idaho, to Portland, Oreg., and the deepest practicable channel on the Willamette River from Harrisburg, Oreg., to Portland.

C. An increase in presently available power-generating facilities to meet the anticipated early requirements of the region, involving construction of additional Federal projects to provide 4,400,000 kilowatts of additional prime power, with a reliable peaking capability of approximately 6 million kilowatts, and including an extended transmisison system for distribution of this power.

D. Irrigation of approximately 450,000 acres of new land and provision of supplemental water supply to 530,000 acres, which includes irrigation projects recommended by the Secretary of the Interior on June 3, 1948, all in addition to the acreage remaining to be irrigated from projects already authorized.

E. Conservation of salmon and other migratory fish to the maximum practicable extent.

F. Material assistance in meeting stream pollution and drainage problems of the basin and substantial contribution to the recreational opportunities of the region.

G. Minimum interference with the existing regional economy, with fish and wildlife habitat, and with the many scenic and recreational areas of the basin, such as those along the McKenzie River and in the Flathead Lake and Pen Oreille areas.

The comprehensive plan which best meets the needs of the basin is constituted as follows:

A. A main control plan of multiple-purpose reservoirs and lower Columbia River levees, which will meet the principal basin needs for power, Columbia and Kootenai River flood control and inland navigation, all at a Federal first cost of $1,733,822,000, over and above projects now authorized.

B. Subbasin plans for certain important tributaries which include projects to provide flood control, navigation, and irrigation where economically feasible, together with power and such other benefits as may be developed incidentally. The plans include a recommended modification and extension of the approved comprehensive plan for flood control, navigation, and other purposes in the Willamette River Basin to provide a more complete development at a total Federal first cost of $390,746,000. Three previously recommended improvements for flood control are rerecommended at a total Federal first cost of $7,137,000, together with 4 previously recommended river and harbor improvements which are rerecommended at a total Federal first cost of $1,875,000. In addition to the above subbasin improvements, a program of local flood protection works is recommended at an estimated total Federal cost of $29,155,000, which will provide necessary protection to a large number of localities throughout the basin. In the interest of irrigation development, the irrigation projects which were recommended for authorization by the Secretary of the Interior in June 1948, are also included in the subbasin plans.

In addition to the main water resource developments, several auxiliary programs of major importance are required as follows:

A. Transmission facilities for distribution of the power produced by existing, authorized, and recommended projects. The Bonneville Power Administration estimates the total cost of additional transmission facilities for the main control plan at $462,669,000.

B. The lower Columbia River fishery plan, to insure conservation of the natural fishery potential. The estimated cost of this program, as planned by the United States Fish and Wildlife Service, is $20 million, of whish $1 million has been appropriated for planning and initial construction.

67129—56——19

C. An expanded hydrometerological network estimated to cost $500,000 to be operated by the various responsible agencies, in order that coordinated operation of the several multiple-purpose reservoirs can be assured.

D. Adequate programs for conservation of soil and forest cover, through the Forest Service and Soil Conservation Service of the Department of Agriculture, to further retard runoff and the erosion of soil, and to prevent excessive sediment loads in streams and siltation of reservoirs.

Chapter III. Main Control Plan and Related Programs

(Pp. 99–101)

1. *Relationship of main control plan to long-range plan.*—The present and predicted future expansion of the Pacific Northwest, discussed in chapter II, and the requirements for various aspects of development make it apparent that urgent need exists for a coordinated, long-range plan for multiple-purpose development of the water resources of the Columbia River. A substantial part of that development must be undertaken in the near future, if many essential aspects of the welfare of the region are not to suffer unnecessarily. The potentialities and character of later developments also must be foreseen with reasonable accuracy and provided for in the immediate program, if the optimum utility of the resource is to be realized. The purposes of this chapter, therefore, are threefold: To review the existing and authorized water use facilities, together with the previous recommendations of this Department and other agencies in the light of current needs; to devise the expanded river system best adapted to meet most urgent present and immediate future needs; and to outline longer-range plans leading toward eventual optimum utilization of the resource.

2. Such plans must recognize not only the individual requirements of each useful purpose to be served, but also must successfully integrate the many uses as a balanced system that will yield the maximum, combined public benefits. Attainment of such ends is entirely possible, largely because of the predictable runoff characteristics of the Columbia River system and the foresight of Congress in providing for thorough investigation before much development has taken place. In a region so comparatively young and rich in potential resources, no ultimate limit of expansion can be visualized with any assurance at this time. The development of the water resource, along with all other economic potentials, therefore, must be conceived in successive stages leading logically from one to another and developed on progressively broader and more flexible lines as they extend further into the future.

3. The physical magnitude of the basin and the complexities of its many interrelated problems have required extensive investigations. It was apparent early in the study that two general categories of problems and solutions would be involved; namely, those confined to specific localities, involving irrigation, minor flood control, and local navigation; and those of regional scope, such as stream regulation for main-stem flood control, continuous inland navigation routes, and coordinated system power development. The principal features of the comprehensive plan are:

(*a*) A series of large, multiple-purpose dams and reservoirs to be operated as a coordinated system, in conjunction with lower Columbia River levees, to control main Columbia River floods, to improve inland navigation, and to furnish the major part of the power requirements of the basin. Some of the reservoirs will be located on tributaries and have large local benefits, but the basic factors in both design and operation are basinwide needs. Only one of the reservoirs, namely Grand Coulee, can be used to a major extent for irrigation. This system is designated as the main control plan.

(b) Plans for the several subbasins vary in character and scope, but they are designed to serve the local needs of the respective subbasin as well as provide additional projects to supplement the main control plan. The principal subbasin plans are the Williamette project plan, in which the major interest is flood control and allied purposes including power, navigation, irrigation, and drainage; the Kootenai Valley plan, involving primarily flood control and power; the upper and central Snake River subbasin plans in which the major interests are irrigation, flood control, and other purposes, including power; and the Clark Fork-Pend Oreille River plan including flood control, power and irrigation development. Spokane and Yakima Rivers, lower Snake River, and certain sections of main-stem Columbia River with its lesser tributaries, also are included in subbasin plans conceived to meet the respective local needs. Possible developments in the Columbia River system in Canada also are considered; so far as such

developments may affect planning in this country, although a subbasin plan for this area can be developed only by Canadian authorities. The respective subbasin plans also include the irrigation developments specifically recommended by the Secretary of the Interior.

(c) Associated work to be performed by or with the participation of other agencies embodies the improvement of lower Columbia River tributaries for salmon, the expansion of the regional power transmission system, and the expansion of hydrological and meteorlogical reporting and forecasting facilities.

(d) Related programs of other agencies include those of the Department of Agriculture for conservation of soil, forest cover, and water, and watershed treatment programs of that Department and the Department of the Interior. Probrams of many other agencies are more or less directly related also. These have to do with recreation, wildlife, pollution abatement, public health, and domestic and industrial water supplies.

(e) Dams and reservoirs proposed for later development, and those considered in a preliminary way as more remote possibilities when the needs of the region may require such development.

JUSTIFICATION

(Pp. 117–124)

65. *Principles.*—The development of Columbia River water resources recommended herein to meet the multiple needs of the basin is a combination of, and enlargement upon, the regional planning that started a score of years ago with the report under review and continued in subsequent minor reports. The projects outlied in the main control plan have been conceived and presented as further steps in the overall regional system improvement. The justification for immediate construction of the projects is based upon economic analyses of these projects added to the existing and authorized system. The economic analysis and justification in each case simply stated what these additions to the system will accomplish and what the added cost will be. Therefore, the economic justification already established for existing and authorized projects is not reviewed herein.

66. Aside from the new projects, only such minor modifications in outlet facilities as are needed at Grand Coulee and Hungry Horse Dams to make these reservoirs effective for flood control, and such additional generating installations as can profitably be made at the Foster Creek, McNary, and lower Snake River Dams to utilize the added dependable flow resulting from the recommended plan, are considered herein with respect to costs and resulting benefits. Certain existing and authorized projects—namely, Palisades Reservoir, Payette, and Boise River projects—are relied upon for incidental flood control. No modifications or additional costs are required to utilize these projects in the overall plan, but the proportionate share of the additional benefits which accrue to the system are credited to these projects. The operation of certain proposed additional headwater projects in the interest of regional flood control provides material protection for local upstream areas, and these local benefits are credited to the respective reservoirs that create such benefits.

67. Although irrigation benefits were a major factor in the planning and in justifying other important existing and authorized projects, benefits to irrigation are minor factors in the main control plan. Certain irrigation benefits will accrue through reduction in pumping costs to areas adjacent to pools, and these benefits are credited to the individual projects.

68. The system analyses of flood-control storage and local levee projects and routings of representative floods and economic evaluation of flood-control benefits are contained in appendix M. Data on the regional aspects of navigation with available tonnage and savings for various reaches of Snake and Columbia Rivers and system analysis and distribution of average annual navigation benefits also are contained in appendix M. Complete analyses of system power benefits with discussion of existing and authorized plants and computations of incremental benefits of each project are contained in appendix O.

69. Many minor items of direct public benefit are omitted from the economic analyses. Among these are irrigation benefits to scattered small tracts to which reservoir water will be made readily accessible; public health and sanitation benefits through pollution abatement where the problem is not yet acute and where it will be prevented from becoming so by the increased dependable streamflows; improved domestic and industrial water supplies; and various conservational and recreational benefits. Recreational benefits ordinarily cannot be

evaluated in advance of project construction, as such benefits are largely dependent on detailed design and management of facilities, all of which, to have the greatest utility, require collaboration with local civic and commercial groups and several State and Federal agencies. Preliminary estimates only of minimum essential expenditures for recreational facilities and public accommodations are included in project costs with benefits equivalent to the cost. Due to the existing and potential development for recreation on Pend Oreille Lake, as outlined in the interim report covering Albeni Falls project, recreational facilities will be finally determined upon authorization of that project. Hence, no costs or benefits have been allocated to this project for recreation. Undoubtedly the extra benefits from recreation and the other sources mentioned would, if carefully evaluated, improve the economic aspects of the recommended developments, individually and collectively.

70. Intangibles, such as national security, loss of life, improved standards of living, and stabilization of business and employment over a long period, will be impressive byproducts of this development. No attempt is made to evaluate these factors in monetary terms because any one may be so far-reaching under certain conditions that accurate segregation and measurement become impracticable. Nevertheless, a number of these factors constitute potent arguments for the development of the valuable water resource now largely wasted and far outweigh the few minor disturbances of local economy or conflicts with resources of lesser significance that cannot be avoided.

71. The exclusion of numerous benefits, tangible and intangible, together with the rigorous "net" bases upon which the major benefits are evaluated, result in a conservative presentation of the economics of the individual projects and of the plan.

72. *Flood-control benefits.*—About 90 percent of the total flood-control benefits resulting from the main control plan will accrue to Columbia River and backwater areas below the mouth of Yakima River. The main control plan, with headwater and main-stem storage, together with the levees, flood walls, and bank protection proposed along the lower river, will reduce flood damages in the lower basin about 94 percent. Moreover, the proposed local protective works in the lower basin will provide substantial benefits from increased land use. Of the remaining flood-control benefits, 53 percent will be on Kootenai River, 36 percent in the Clark Fork-Pend Oreille Basin, 8 percent on main Snake River, and a small amount on the main-stem Columbia River above Yakima River. The evaluated annual flood-control benefits for various tributaries and the main-stem Columbia River, which will be creditable to the main control plan of improvement, are shown in the following table:

TABLE III–8.—*Summary of flood-control benefits creditable to main control plan*

Location	Reduction of annual damages	Annual value of increased land use	Total evaluated annual flood-control benefits
Tributaries:			
Kootenay River (Canada)	$259,000		$259,000
Kootenai River (United States)	630,200	$16,700	646,900
Clark Fork-Pend Oreille Basin	630,800		630,800
Snake River	136,900		136,900
Subtotal	1,656,900	16,700	1,673,600
Columbia River:			
Foster Creek to Yakima River	20,000		20,000
Yakima River to Bonneville	182,000		182,000
Bonneville to Camas, Wash., and Sandy River	266,800	148,000	414,800
Camas, Wash., to Lewis River	1,982,000	1,164,000	3,146,000
Sandy River to Willamette River	3,196,500	63,800	3,260,300
Willamette River backwater area (Portland and vicinity)	3,332,000		3,332,000
Lewis River to Baker Bay	2,535,700	125,100	2,660,800
Willamette River to Youngs Bay	1,160,200	153,400	1,313,600
Winter floods in lower Columbia River reach	188,700		188,700
Subtotal	12,863,900	1,654,300	14,518,200
Total	14,520,800	1,671,000	16,191,800

73. The distribution of local benefits on tributaries to individual projects is relatively simple, but an equitable distribution of main-stem benefits to the respective projects of the main control plan involves determination of the

effectiveness of storage over a wide range of floods and other special considerations as to storage availability and emergency uses. The storage component of the main control plan is based on reducing peak discharges at the Dalles to 800,000, 700,000, and 500,000 second-feet, respectively, for 1894, 1948, and 1933 flood magnitudes. Even with such regulation, levees, flood walls, and other local protective works are required in the lower basin. If ample storage capacities existed or could be made available immediately, these levees could be built to a lower elevation to supplement the control by storage, except where winter floods occur for which storage is not effective. However, no such storage can be provided for a number of years. Consequently, substantial local improvements will be required in the interim for primary flood control, and the local works component of the main control plan is entitled to share with storage in all lower-basin flood-control benefits from control of floods other than those occurring in winter.

74. Experience has shown that land use will increase extensively soon after completion of protective works. Therefore, the flood-control benefits to be assigned include, in addition to the reduction of damages, values on account of higher land use. So many variable factors are involved that no mathematically exact method of distinguishing between the benefits assignable to local improvements and those assignable to storage can be derived. After consideration of all factors, a basis for the assignment has been adopted which, though somewhat arbitrary, is believed to be reasonable. The benefits are distributed to levees, flood walls, and other local improvements in the main control plan on the basis of an average 1.2 to 1 benefit-to-cost ratio pending completion of detailed studies of individual projects now underway. For lower river areas where storage is ineffective for winter floods, the benefits for protection therefrom are credited entirely to the levee systems.

75. Flood-control storage at both Priest Rapids and John Day Dams on the lower main stem Columbia River is essentially of standby nature, to be used in emergencies after upstream storage becomes ineffective or control is lost on certain principal tributaries, or for quick control of downstream runoff. The incremental cost of this single-purpose storage is high, but its use is essential to the effectiveness of Grand Coulee storage and of the plan as a whole. Therefore, benefits are assigned to this storage equivalent to the incremental costs of the flood-control capacities.

76. The distribution of the remaining flood-control benefits creditable to headwater storage dams was based on respective effectiveness of the reservoirs. The relative effectiveness of the several reservoirs was determined first for the control each will contribute for a range of floods of 1933, 1948, and 1894 magnitudes. The effectiveness of each reservoir was determined by considering the control of these floods. The distribution of these benefits to individual projects is shown in chapter IV.

77. *Navigation benefits.*—The direct benefits to navigation are based on the savings to consumers of the average tonnage that can be expected reasonably to move from and to the tributary area over a 50-year period, beginning with the completion of slack-water and open-river improvements on Snake River. Savings are incremental to those creditable to the presently improved waterway through its economic life. Basically, the incremental savings are estimated over a total navigable stretch of 331 miles above Bonneville pool of which 160 miles and 171 miles are on main stem Columbia River and lower Snake River, respectively. The estimated future average annual tonnages range from 1,130,000 tons on the upper 30-mile stretch of Snake River to a total cumulative average annual tonnage of 4,827,000 tons through The Dalles pool. The total annual system navigation benefits are estimated at $7,411,400. About 45 percent of the system benefits accrue to the additional projects in the main control plan. The method of distributing these total system savings to the individual units of the system was as follows: First, each unit of the system was credited with a share of the benefit equivalent to the cost of direct navigation facilities, such as locks and appurtenant works at the dams and approach channels and turning basins at harbors along the various stretches which are essential to the plan; second, the remaining net benefits were distributed among the separate stretches of the river and units of the system by an appropriate method which is described in detail in appendix M. In addition to the system benefits, other navigation benefits are attributable directly to Hells Canyon Dam for navigation, on Hells Canyon pool, and to increased navigable depth in the open-river channels on Snake River. Also, certain navigation benefits in the stretch between Bonneville and Vancouver are creditable to headwater storage projects by virtue of the increased channel depths that would be created by releases of

stored water during the low-water period. These benefits have been distributed to the various headwater reservoirs in proportion to their respective influences, both in point of magnitude and duration. The total average annual navigation benefits creditable to projects recommended in the main control plan amount to $3,442,600. The distribution of these annual navigation benefits to individual project is shown on table III–10.

78. *Power benefits.*—The power is evaluated herein on a Northwest area systemwide—that is, marketwide—basis was predicated fundamentally on the estimated value of a kilowatt-hour of energy delivered to customers at the load centers. In order to arrive at a reasonable figure of power value, herein denoted as a direct power benefit, which would be creditable to the electrical energy developed at the proposed Corps of Engineers projects, the Bonneville Power Administration made a study in cooperation with the Corps of Engineers and the San Francisco regional office of the Federal Power Commission. The resulting joint report is reproduced in appendix O. As a result of the joint investigations referred to, 4.46 mills was adopted as the figure for direct power benefit creditable to each kilowatt-hour of energy delivered to load centers. It is stressed that this value is not an indication of the rates which should be charged for federally generated energy. The Grand Coulee and Bonneville generating stations and the existing Federal transmission system were constructed during a period when costs were considerably below the estimated construction costs of the new projects. Inasmuch as these existing Federal developments will continue to supply a large block of power at relatively low cost, the higher costs will not be reflected in full in the overall larger system cost of power even at the present higher price levels. Even the total annual costs equitably chargeable at present price levels to newly constructed Federal generating stations and transmission facilities would not dictate as high an average unit cost of energy as that adopted herein as a measure of direct power benefit. Therefore, the establishment of rates which would yield revenues equal on the average to the full economic benefits, and derived upon the basis of "what the traffic will bear," is neither theoretically nor practically necessary.

79. The foregoing figure for direct-power benefit has been employed throughout the review report in connection with the economic analyses of all generating stations. The Willamette Basin projects were analyzed similarly, but the proximity to local load centers and the location of the projects at one end of the Northwest transmission system would permit the maximum economy in the design and utilization of that portion of the primary transmission system to which the projects will be directly connected. The bases for direct-power benefits creditable to the generating stations in this instance are described more fully under that section of the report pertaining solely to the Willamette Basin, appendix J. However, from a systemwide standpoint the effect of the variation thus introduced in arriving at direct-power benefits is negligible.

80. *Economic project analyses of recommended C–2 system development.*—A number of different methods of analysis were considered as possible bases for determining the economic feasibility of the recommended multiple-purpose projects included under the recommended plan for Columbia River Basin development. Analysis of these projects is complicated by reason of the fact that direct benefits from power generated at most of the sites is in part creditable to upstream storage releases. Furthermore, there are costs attendant to increased power installations necessary at individual projects in order to take full advantage of the streamflows made available as a result of stream regulation by storage projects.

81. The method of analysis finally adopted as the most equitable from all standpoints was based principally on the following: The entire power system, including existing, authorized, and recommended multiple-purpose projects, is examined as an entity; all costs incurred at individual projects are charged to that project; power benefits attributable to individual projects and in part creditable to one or more upstream storage projects are allocated equitably among the projects affected. The complete details of the interpretation and application of the foregoing hypotheses are involved. They are described under the section Economic Analysis in appendix O.

82. *Summary of power benefits.*—The prime power that will be generated at the additional plants recommended in the main control plan is 3,178,000 kilowatts, which will have an annual benefit of $82,628,000. Due to increases of prime power at downstream plants from upstream storage an additional power

benefit of $21,758,000 annually is creditable to the recommended plants and $2,952,000 to downstream plants wherein additional installations are made. A total power benefit amounting to $107,338,000 annually is thus creditable to the additional project proposed in the main control plan. The distribution of power benefits from individual projects are shown in chapter IV and discussion of repayment is contained in chapter V.

83. *Other benefits.*—The main control plan has certain benefits which can be evaluated only partially. The Dalles and John Day Dams will provide pools for pumping to irrigate over 160,000 acres of land, with reduction of lift ranging from 45 to over 100 feet and a reduction of pumping costs of $137,500 annually. In addition an abundant supply of power will be available during the irrigation season at very low cost, without which irrigation of these lands will not be practical.

84. The pools of all reservoirs will also be open to the general public for recreational use. Several of these pools are in very rugged and generally inaccessible country where the construction of roads to the dam, and possibility of operating boats on the pools, will make many new areas accessible to the public. Facilities will be provided at the various dams and pools for the convenience of the public. The annual cost of these facilities will range from $40,000 to $88,000, depending on the amount of use expected, and total $374,000. The only benefits credited to the projects for reservoir management and public use are evaluated as equivalent to the annual costs of the required facilities and the operation and maintenance thereof. Obviously there is an additional intangible benefit of substantial importance to the region.

85. *Summary.*—The total capital costs for the main control plan including first costs and interest during construction are estimated to be $1,970,814,000, of which $13,493,000 would be non-Federal expenditures for rights-of-way, highway and street relocations, and cash contributions on local improvements projects. The total estimated annual costs are $89,522,000, which includes interest on the total investment, amortization of all the capital costs in a 50-year period, interim replacements, and operation and maintenance. The total annual benefits are evaluated at $127,483,900. Of the total benefits, 12.7 percent is creditable to flood control, 2.7 percent to navigation, 84.2 percent to power, and the remainder, 0.4 percent to irrigation and public use of projects. The annual benefit-to-cost ratio of the projects in the recommended main control plan, therefore, is 1.42 to 1. Details of capital and annual costs and annual benefits are shown in table III–9. Distribution of the benefits to the several projects and functions thereof is shown in table III–10.

Irrigation as Related to Subbasin Plans

(P. 126)

86. *General.*—Subbasin plans are discussed individually in chapter IV. Certain general aspects and common features of irrigation plans of the Bureau of Reclamation, as related to subbasin plans, are outlined in the following paragraphs.

87. *Irrigation.*—Plans for the storage of irrigation water, its distribution and the selection of areas which are to be served, although extremely important to the regional economy, are primarily local. The plans for water resource development embodying irrigation as prepared for the various subbasins by the Bureau of Reclamation have been incorporated along with flood control in the proposed subbasin plans. In the initial stage, the plan of the Bureau for the development of the water resources of Columbia Basin comprises 44 projects, of which 1 has been substantially completed, 6 are under construction, and 2 are authorized. The ultimate stage of the plan tentatively contemplates some 200 projects as future possibilities.

88. For the second stage (category I) of the initial development, the Bureau has recommended authorization of a group of 13 irrigation projects in 5 States for immediate construction. These irrigation projects would serve 292,620 acres of new lands, supply supplemental water to 81,250 acres, and include power installations of 165,000 kilowatts; the estimated first costs at January 1, 1948,

price levels are $273,324,000. Pertinent data on this group of projects are summarized in the following table:

Category 1, projects recommended by Secretary of Interior for construction by Bureau of Reclamation [1]

Project	Acres irrigated		Power installation (kilowatts)	Estimated cost, 1948 base
	New land	Supplemental water		
Montana:				
Bitterroot Valley, excluding Woodside unit	1,700	49,000	0	$12,400,000
Bitterroot Valley, Woodside [2] unit				
Missoula Valley [2]	900	1,200	0	269,000
Washington: Yakima, Kennewick division [3]	30,800	0	0	14,400,000
Wyoming: Upper Star Valley	6,000	9,500	0	3,100,000
Idaho:				
Mountain Home (Payette unit)	230,000	0	165,000	230,000,000
Cambridge bench	0	2,580	0	620,000
Council	3,250	3,340	0	742,000
Mann Creek [3]	270	4,030	0	2,062,000
Oregon:				
Vale-Bully Creek estension	5,000	0	0	2,370,000
Crooked River	8,400	10,100	0	4,100,000
The Dalles—west unit	3,030	1,500	0	2,300,000
Canby	3,270	0	0	961,000
Total	292,620	81,250	165,000	273,324,000

[1] Basic data obtained from Columbia River Basin report of Bureau of Reclamation, submitted to the President on June 3, 1948, by the Secretary of the Interior.
[2] Previously authorized under Case-Wheeler Act and on June 3, 1948, now rerecommended by the Secretary of Interior for authorization under reclamation acts.
[3] Authorized by act of Congress, Public Law 629, dated June 12, 1948.

CHAPTER VII. RECOMMENDATIONS

(Pp. 342–345)

1. The division engineer therefore recommends that the comprehensive plan of water resource development, as heretofore described, be adopted as a general guide for the further development of the water resources of the Columbia River Basin and the related programs of other agencies, and that future plans for water use development give due consideration to the comprehensive plan outlined herein.

2. To best meet the present and immediate future needs of the Columbia River Basin for flood control, navigation, regional power supply, irrigation, and other water uses, the division engineer recommends that the main control plan summarized below be authorized for immediate construction at an estimated total Federal first cost of $1,733,822,000 and an estimated total non-Federal first cost of $13,493,000, plus a subsequent Federal cost of $11,648,750 annually and a non-Federal cost of $440,000 annually for operation and maintenance of the completed works, based on price levels prevailing as of January 1, 1948. The above Federal costs include the estimated first cost and annual cost of Glacier View which is conditionally recommended at this time.

3. The main control plan includes the following elements and embodies the following specific recommendations:

(*a*) The following multiple-purpose dams and reservoirs are recommended for immediate construction in the interest of flood control, navigation, power, and other water uses:

(1) Libby project, Kootenai River, Mont.
(2) Albeni Falls project, Pend Oreille River, Idaho.
(3) Priest Rapids project, Columbia River, Wash.
(4) Hells Canyon project, Snake River, Oreg., and Idaho.
(5) John Day project, Columbia River, Oreg. and Wash.
(6) The Dalles project, Columbia River, Oreg. and Wash.
(7) In addition to the above the Glacier View project on Flathead River, Mont., is included for consideration pending the concurrence of the Secretary of the Interior, with a view of its definite recommendation at such time as the Secretary of the Interior may concur. Should its construction

not be authorized after reasonable consideration, further study of feasible alternates will be made.

(*b*) It is recommended that the authorization for Grand Coulee Dam be modified in the interest of flood control to provide for increase in outlet capacity and reservation of 5,120,000 acre-feet of storage for the joint use of flood control, irrigation, and power, at a total additional first cost of $250,000 and an estimated additional annual operation and maintenance cost of $300,000.

(*c*) In order that the Grand Coulee and Hungry Horse projects of the Bureau of Reclamation may be operated most effectively as part of the main control plan, it is further recommended that certain storage capacities in each project be designated as flood control allocations and these capacities, as outlined in this report, be the reservations for each project subject to operation for flood control. Regulations for operation each year, until the danger of summer flood is past, will be prescribed under the authority of and in accordance with the provisions of the Flood Control Act of 1944.

(*d*) To supplement flood protection provided by storage in the recommended reservoirs, for the valuable lands along the lower Columbia River, the division engineer recommends the modification of existing levees and flood walls, construction of new levees and provision of certain bank protection works at a total estimated Federal first cost of $30,501,000 and an estimated non-Federal first cost of $13,493,000, subject to the provision that local interests comply with the requirements of local cooperation specified in the Flood Control Act of 1936, as amended. Annual non-Federal operation and maintenance costs are estimated at $440,000.

(*e*) For improvement and extension of the Columbia-Snake River inland navigation facilities, open-river navigation improvements on Snake River and the construction of necessary approach channels and turning basis on both the Columbia and Snake Rivers are recommended as outlined herein, at a total estimated Federal first cost of $3,650,000 and a subsequent annual cost of $92,750 for operation and maintenance, all subject to the requirements of local cooperation heretofore specified.

4. The division engineer also recommends for authorization at this time, as an essential initial element of the comprehensive Columbia Basin plan, the modification and extension of the authorized Willamette Basin project to provide a more complete development in the interest of flood control, navigation, drainage, power, and other water uses, at a total estimated Federal first cost for the entire project of $390,746,000, less previously appropriated funds totaling $39,608,825, and a total estimated non-Federal first cost of $41,141,000, plus total Federal and non-Federal annual costs of $2,797,200 and $1,814,700, respectively, for operation and maintenance of the completed works, all costs based on prices prevailing January 1, 1948. This modified comprehensive subbasin plan as described in detail in chapter IV is recommended, subject to requirements of local cooperation as specified in the Flood Control Act of 1936, as amended, and as specified further herein.

5. The division engineer recommends for early construction, as essential elements of this comprehensive Columbia Basin plan, the following subbasin improvements previously reported on favorably and recommended in separate reports (all cost estimates based on price levels prevailing on January 1, 1948):

(*a*) Snake River, Wyo. (Jackson Hole), consisting of approximately 12.6 miles of new levees for flood control in three locations between the town of Moose and the mouth of Fish Creek, at an estimated Federal first cost of $1,447,400 and an estimated non-Federal first cost of $10,600, subject to conditions of local cooperation specified in the Flood Control Act of 1936, as amended. Annual non-Federal operation and maintenance costs are estimated at $10,550.

(*b*) Willow Creek at Heppner, Oreg., consisting of a dam, reservoir, and downstream channel improvement for flood control and incidental irrigation, at an estimated Federal first cost of $5,230,000 and an estimated non-Federal first cost of $60,000, plus subsequent annual Federal costs of $10,000 for operation and maintenance, subject to conditions of local cooperation specified in the Flood Control Act of 1936, as amended, and other specific requirements. Annual non-Federal costs for operation and maintenance are estimated at $900 annually.

(*c*) Umatilla River at Pendleton, Oreg., consisting of levees and channel rectification for flood control, at an estimated Federal first cost of $459,600 and an estimated non-Federal first cost of $38,600, subject to conditions of local cooperation, specified in the Flood Control Act of 1936, as amended, and other specific requirements. Annual non-Federal operation and maintenance costs are estimated at $4,800.

(*d*) Umatilla Harbor, Oreg., consisting of excavation of a harbor area and approach channel at an estimated Federal first cost of $416,250 and an estimated non-Federal first cost of $204,700, plus a subsequent Federal cost of $1,000 annually for maintenance, subject to certain conditions of local cooperation. Annual non-Federal costs for operation and maintenance are estimated at $2,365.

(*e*) Columbia Slough Channel, Oreg., consisting of widening and deepening of a side channel to North Portland Harbor at an estimated Federal first cost of $905,100 and an estimated non-Federal first cost of $236,200, plus a subsequent Federal cost of $16,700 for operation and maintenance, subject to specified requirements of local cooperation.

(*f*) Westport Slough Channel enlargement, consisting of widening and deepening a Columbia River side channel at Westport, Oreg., at an estimated Federal first cost of $111,750 and an estimated non-Federal first cost of $31,500, plus subsequent Federal and non-Federal annual costs of $8,400 and $2,100, respectively, for operation and maintenance, subject to specified requirements of local cooperation.

(*g*) Baker Bay Channel and mooring basin, Washington, consisting of a mooring basin for small boats, an approach channel and an improved waterway to the Columbia River main ship channel, at an estimated Federal first cost of $442,000 and a non-Federal first cost of $112,000, plus subsequent Federal and non-Federal annual costs of $8,000 and $10,000, respectively, for operation and maintenance, subject to specified requirements of local cooperation.

6. To provide interim flood protection to the town of Bonners Ferry, Idaho, prior to completion of adequate upstream storage, the division engineer recommends construction and extension of local levee protection at a total estimated Federal cost of $750,000 and an estimated non-Federal cost of $79,000 subject to the provision that local interests comply with the requirements of local cooperation specified in the Flood Control Act of 1936, as amended. Annual non-Federal operation and maintenance costs are estimated at $7,000.

7. In order to provide for the large number of relatively small local flood-control problems throughout the Columbia River Basin not covered by specific recommendations above, the division engineer recommends that funds in the amount of $28,405,000 be authorized for the construction of additional local flood protective works, other than storage reservoirs, with the understanding that prior to construction a favorable showing of engineering and economic feasibility will be approved by the Chief of Engineers and the Secretary of the Army and subject to the provisions that prior to construction local interests give assurances satisfactory to the Secretary of the Army that they will comply with the requirements of local cooperation set forth in the Flood Control Act of 1936, as amended. The estimated non-Federal first cost of this program is $1,993,000.

8. The division engineer recommends that where the reservoirs recommended inundate Indian lands and usual and accustomed Indian fishing grounds, these facilities be replaced in kind, where practicable. Where this is not practicable, in order to insure recognition of treaty rights and special obligations of the Government toward the Indians, it is recommended that compensation for any major deficiency be provided by special act of Congress following a special report and recommendation by the Chief of Engineers.

9. As essential elements of the comprehensive plan for water-resource development which must be accomplished at this time, in conjunction with the above recommended main control plan, it is recommended that Congress lend appropriate recognition to associated plans involving work or participation by other agencies as outlined herein in order that the main control plan and subbasin plans may function as herein contemplated and recommended. These plans include:

(*a*) The lower Columbia River fishery plan of the United States Fish and Wildlife Service.

(*b*) The hydrometeorological network for the basin.

(*c*) Necessary transmission facilities of the Bonneville Power Administration.

(*d*) Programs of conservation of soil and forest cover of the Soil Conservation Service and the Forest Service of the Department of Agriculture.

10. With respect to each of the new multiple-purpose projects, or their alternates, recommended in paragraph 3 (*a*) herein as a part of the main control plan, it is recommended that the Chief of Engineers be authorized to estimate the net annual tax loss, if any, to the local governments concerned, as of the time work on said project actually commences or loss is actually incurred. It is further recommended that the Chief of Engineers be authorized to pay annually to the State or States in which such project is located a sum equivalent to that deter-

mined by the Chief of Engineers as the net annual tax loss, the State or States to distribute such payments to the local taxing units suffering the loss. Such payments in lieu of taxes, which will be considered as an operating charge against the power features of the project, should be authorized only when necessary to leave the local government in as good a position, taxwise, as it would have been had the development not been undertaken.

11. In the interest of continued agricultural and general economic growth and expansion in the Columbia River Basin, as a part of the comprehensive development, the division engineer recommends that the group of irrigation projects, recommended by the Secretary of the Interior in June 1948, costing $273,324,000 be authorized for construction by the Bureau of Reclamation concurrently and pro rata with the main control plan, subject to necessary agreements by the States concerned and to the policy of Congress.

THERON D. WEAVER,
Colonel, Corps of Engineers, Division Engineer.

Mrs. GREEN. I yield back to the gentleman from Missouri.

Mr. CHRISTOPHER. The other question I would like to ask, Mr. Williams, is: In view of the record that the Bureau of Reclamation has made in conserving our water and irrigating our soils and ending floods, do you consider the Bureau of Reclamation a reliable agency of the Federal Government?

Mr. WILLIAMS. The best.

Mr. CHRISTOPHER. They do recommend that the high dam be built in Hells Canyon, do they not?

Mr. WILLIAMS. I believe not.

Mr. CHRISTOPHER. You believe not?

Mr. WILLIAMS. I do not believe there is anyone in the Bureau today—now this would only be my opinion—above a certain level, and thinking about the complete and comprehensive development of the Snake River, that would recommend that high Hells Canyon Dam be built today.

Mrs. PFOST. Will the gentleman from Missouri yield at that point?

Mr. CHRISTOPHER. I yield.

Mrs. PFOST. Mr. Williams, however, that is a recent policy rather than one that has been carried on for some 20 years previously, is it not?

Mr. WILLIAMS. I am not quite certain. I know what you are referring to, but I do not believe that is necessarily the reason that certain ones in the Bureau at least have changed their thinking. Their thinking has been changed by investigation farther down the reaches of Hells Canyon where they found dam sites that could be developed much cheaper and at a much less cost per kilowatt, where they could develop a certain amount of storage and the storage could be developed on up river. I am quite certain, Congresswoman, that that would be the thinking in the Bureau when you got far enough up—that they only knew a certain part of this river—then when you got up to where they had the whole picture, I doubt if you would find anyone—and this is only an opinion—that would be in favor of high Hells Canyon.

Mr. ASPINALL. The Chair is not going to accept the responsibility for keeping Mr. Williams any longer. On the other hand, if the committee wishes to accept it, it is their responsibility. They have a right.

Dr. MILLER. I think it fair that he be permitted to catch his plane.

Mr. WILLIAMS. I would appreciate it.

(Discussion off the record.)

Mr. ASPINALL. Is there any objection to excusing the witness at this time?

You have been a very fine witness, Mr. Williams, and we appreciate it.

Mr. WILLIAMS. Thank you a lot.

Mr. ASPINALL. The Chair calls to the witness stand Mr. Houston.

Mr. BUDGE. Mr. Chairman, I am wondering. We have three people here representing the water users upstream, all of whom should be heard jointly. I wonder if they could be heard now.

Mr. ASPINALL. It is all right with the Chair if the gentleman wishes to call them. If the gentleman will call them and let them present their statements at this time and then be cross-examined en banc, that would be fine.

Mr. BUDGE. I would call Mr. Coleman, Mr. Silbaugh, and Mr. Sharp.

Mr. ASPINALL. Mr. Coleman, will you present your statement at this time. Mr. Coleman is director of the Idaho State Reclamation Association.

STATEMENT OF ALEX. O. COLEMAN, ST. ANTHONY, IDAHO, DIRECTOR, IDAHO STATE RECLAMATION ASSOCIATION

Mr. COLEMAN. Mr. Chairman and members of the committee, I am Alex. O. Coleman, a farmer and stockman of St. Anthony, Idaho. My home place consists of a quarter section of land which is irrigated by the waters of the North Fork, or Henry's Fork, of the Snake River, with the supplemental water from the Island Park Reservoir of the Fremont-Madison Irrigation District. I also operate a small farm in Madison County. The water for this acreage is provided by the Teton River, a tributary of the Snake River, which for many years has presented a serious flood-control problem in the communities through which it passes.

At the present time I am a member of the Committee of Nine, which regulates and manages the distribution of water for Water District No. 36. I am a director of the Idaho State Reclamation Association, representing the upper Snake River Valley. For the past 15 years I have been a director of the Twin Groves Canal & Irrigation Co., which furnishes the larger portion of the natural-flow water for my farm. I am a member of the Idaho Commission of the Columbia Interstate Compact Commission.

I am attending this hearing as a representative of the Idaho State Reclamation Association. On the 25th and 26th of April 1955, at our annual convention which was held at Idaho Falls, Idaho, a resolution was passed unanimously in opposition to the proposed building of a Federal dam in the Hells Canyon region. Some of our reasons for opposing this dam are: First, we feel that the building of such a dam is an infringement on our water rights. Second, it gives us no assurance of future upstream development. Third, it deprives the State of Idaho of the opportunity to develop her own natural resources. Fourth, it does not provide a means of flood control as its proponents claim. Fifth, the order of listing of preferential uses of water in this bill is highly objectionable to reclamationists.

Let us consider these bills—H. R. 4719, 4730, 4739, and 4740—first as they affect our States' rights:

When Idaho was admitted to the Union as a State, her constitution was accepted by the Members of Congress and Senators from the 42 States of the Union. One paragraph of this constitution in particular grants and regulates the rights of the use of water within the State. I quote:

> Water being essential to the industrial prosperity of the State, and all agricultural development throughout the greater portion of the State depending upon its just apportionment to, and economical use by, those making a beneficial application of the same, its control shall be in the State, which, in providing for its use, shall equally guard all the various interests involved. All the waters of the State, when flowing in their natural channels, including the waters of all natural springs and lakes within the boundaries of the State—

I should like you to pay particular attention to this clause—

> are declared to be the property of the State, whose duty it shall be to supervise their appropriation and allotment to those diverting the same therefrom for any beneficial purpose, and the right to the use of any waters of the State for useful or beneficial purposes is recognized and confirmed; and the right to the use of any of the public waters which have heretofore been or may hereafter be allotted or beneficially applied, shall not be considered as being the property right in itself, but such right shall become—

and this is important—

> the complement of, or one of the appurtenances of, the land or other thing which, through necessity, said water is being applied; and the right to continue the use of any such water shall never be denied or prevented—

now, these are the conditions under which Idaho was admitted as a sovereign State to the Union—

> from any cause than the failure on the part of the user thereof to pay the ordinary charges or assessments which may be made to cover the expenses for delivery of such water.

Our second reason for opposing these bills is that they give us absolutely no assurance of future upstream development. Now, members of this committee, I am sure that no conscientious Member of Congress would consent to the expenditure of one-half to one billion dollars of the United States Treasury funds, of the taxpayers' hard-earned money, to build this dam without the assurance of adequate water to fill it. This can only be done by the filing on all of the unappropriated waters that are and may be at any future time a part of the Snake River. This fact alone would deprive Idaho of any future independent development. Agriculture would be stopped immediately.

A Columbia interstate compact system has been in the process of negotiation for the past 4 years and was finally approved by the commissioners of the 7 Columbia Basin States last January. As a member of the Idaho commission I attended practically all of the meetings during these years. The Legislature of the State of Idaho approved that compact, but the States of Oregon and Washington did not.

The upstream States are contending that beneficial consumptive use should have priority over downstream nonconsumptive use. We feel that the desire of the downstream States, Oregon and Washington, to control all of the water regardless of its place of origin is the predominant factor in obstructing the ratification of the compact as it now is framed. We, in Idaho, definitely feel that no development whatsoever of the Snake River, which is an interstate stream, should be undertaken until a compact of the Columbia River States

has been ratified by the States involved and by the United States Congress.

There is the possibility, then, that the building of this high Federal dam (under these bills) would do one or more of these things: It could either stop future development in agriculture; it could threaten the water rights of land now in production; or it could be built without the guaranty of adequate water for its maintenance. In any of these events the building of this dam would deprive the State of Idaho of the constitutional right to fulfill her obligations to her citizens.

Third, these bills deprive Idaho of the right to develop her own natural resources. Water is to Idaho what coal and oil are to the great States of Pennsylvania, Utah, and Wyoming. Water is to Idaho what copper is to Montana. Water is to Idaho what natural gas is to Oklahoma, New Mexico, and Texas. Water is to Idaho what offshore oil is to Louisiana, Texas, and California. Water is to Idaho what timber and fishing industries are to Washington and Oregon. We in Idaho have not interfered in the natural-resource development of our sister States. Why, then, should Idaho be deprived of her right to manage for her benefit her most valuable resource?

From the standpoint of reclamation, all hydroelectric power should be secondary to the beneficial uses of water upon the arid land. We feel sure that if the Federal Government develops Hells Canyon a large portion of the power will be exported to other areas and not be made available for our future development. From our own knowledge of matters of this kind, we are certain that the control of State government is far superior to that of the Federal level where local problems and development are concerned.

According to the man on the land, the ownership of water facilities should be in local interests and subject only to the satisfaction of contractual obligations. This same rule should apply to power developed incident to the impounding of water for irrigation. There has been an increasing tendency to centralize control in Federal Government and special agencies. This is contrary to our belief in the sovereignty of State law. Reclamationists do not favor being deprived of the means of making a livelihood.

Fourth, these bills are not a means of flood control as is claimed The inclusion of the words "flood control" is merely one vehicle by which the proponents expect to secure control of the waters of Snake River. Proponents of this legislation have made this statement regarding flood control:

> Two outstanding engineer organizations have agreed, in writing, that there are tremendous benefits to be attained through the use of the storage space behind Hells Canyon Dam for impounding some of the floodwaters that imperil downstream lives and property. My colleagues will remember 50 lives were lost and $100 million in property damage suffered in 1948, when the Columbia went on a rampage. If a flood similar to that which occurred in 1894—greatest of record—should occur now, with a much greater development along the riverbanks, the total loss would exceed $350 million.

Proponents are employing fear tactics, for the recurrence of the high-water flows attributable to a flood of the magnitude of the 1894 flood are virtually an impossibility. Since that date, there have been many dams built on the Columbia River and its tributaries. In district 36 alone about 5,500,000 acre-feet of storage space has been constructed. Boise River has three outstanding dams which will

guarantee against the recurrence of a flood on that tributary. In the Snake River Basin above Weiser, there is over 9 million acre-feet of storage, or roughly about three-fourths of the average annual flow at that point.

May I draw the attention of this committee to some of the federally constructed dams in the Columbia Basin, which presumably included flood control as a part of their functions, such as Grand Coulee and Hungry Horse. According to proponents, they evidently are of no flood-control value whatsoever.

Let me quote from another proponent:

> In 1948 the Columbia River produced a flood of proportions exceeded only once since the river measurements have been taken. The swollen waters, almost without warning, burst through the protecting embankments at the town of Vanport and inundated it in a wall of angry water. Fifty people were drowned. Damage to property exceeded $100 million.

Proponents would have you believe that all this trouble could have been eliminated if Hells Canyon Dam had been built. Such is not the case, and to justify my statements, allow me to refer you to the Department of the Interior bulletin known as Surface Water Supply of the United States, 1948 issue, part 13, Snake River Basin Geological Survey, Water Supply Paper 1123. This bulletin was prepared in cooperation with the States of Idaho, Oregon, Utah, Washington, and Wyoming and other agencies. I quote from that book the following figures regarding the second greatest flood since records were kept:

> During the 1948 flood the highest maximum discharge of Snake River at Oxbow, which is the last gaging station above the presently proposed Federal Hells Canyon Dam site, was 55,100 second-feet. Now, compare these figures of the very same time with those of the Salmon River at Whitebird which maximum discharge was 103,000 second-feet; and the maximum discharge of the Clearwater River at Spalding for the same period was 177,000 second-feet.

On which river, then, is the flood control needed? You be the judge.

Our fifth point of contention with the proponents of these numerous bills is the place relegated to reclamation in their listing of the purposes for which they wish to have this legislation enacted.

If the time ever comes when this issue is hard pressed and controversies are taken in the Federal courts, which is the only recourse and in which our State courts cannot participate, the advocates of water for power could say "Congress gave us preferential use of the water." So, gentlemen, under these bills, there goes our water, Idaho's most valuable natural resource, down the river to build subsidized industries for the Northwest. Is it any wonder that reclamationists are concerned with these future prospects?

Irrigation development under the head of reclamation was not begun by the Federal Government for the purpose of acquiring and operating large amounts of property, or for carrying on a line of businesses as such by the Government, but rather to produce food and fiber for man, and for the purpose of reclaiming the arid lands of the West.

We are concerned regarding the motive in the minds of the proponents of these bills, for they have given practically everything in their bills a preferential use ahead of reclamation. We cannot conscientiously feel that it is water for power which they seek, for if it were, there are other sites far less controversial.

There are two sites on the Clearwater River in Idaho which would present no problem whatsoever as far as reclamation is concerned. With the prospects of these proposed dams and the vast store of electric power which they could supply, and the imminent flood danger which these streams furnish to the lower Columbia, is it any wonder that we became alarmed when the big push is always made on Hells Canyon?

Knowing as we do that Snake River's contribution to flood is infinitesimal and that the aforementioned sites for power dams are available, is it not logical to believe that it is not water for power, but power over the waters of the Snake River, with its attendant control of the means of our making a livelihood, that these proponents seek?

This control of the electric power, by the control of the river systems, would result in the control of the industries of the Nation, the control of transportation, mining, and agriculture. Such a succession of events can only result in the ultimate outcome of an unconstitutional, socialistic form of government for the United States of America.

I feel at this time that it is necessary for me to draw your attention to Idaho's disposition of this Hells Canyon matter. Consecutively as this issue has been placed in the hands of the people, which is their constitutional right, it has been overwhelmingly defeated. The majorities opposing it have been enormous. After all is considered, we are the grassroots of Snake River. Snake River is our life's blood. Snake River is Idaho.

In conclusion, let me quote from a great stateman of our day, a man whom you revere as one of the great Presidents of the United States, whose thinking is world renowned and whose writings I personally admire, the late President Woodrow Wilson. I think it would be well on this day for our Senators and Congressmen to abide by his philosophy. I quote:

> The history of liberty is the history of limitations of governmental power, not the increase of it.

Members of this committee, it has been a privilege for me to represent the reclamation people of Idaho before this fine group.

Mr. ASPINALL. Thank you, Mr. Coleman.

Mr. BUDGE. Mr. Chairman, I suggest that Mr. Silbaugh and Mr. Sharp be called. Then if there is any examination of the three of them, they could be examined together. They all represent the irrigation interests of southern Idaho.

Mr. ASPINALL. All right. The Chair calls Mr. Silbaugh. You may remain seated there at the table, Mr. Coleman.

Mr. Silbaugh, identify yourself for the record.

STATEMENT OF J. H. SILBAUGH, PRESIDENT OF THE BOARD OF DIRECTORS, NORTH SIDE CANAL CO., JEROME, IDAHO

Mr. SILBAUGH. I am J. H. Silbaugh from Jerome, Idaho, president of the North Side Canal Co., member of the State Reclamation Association, and a member of the Committee of Nine.

In order to save time, I would just like to file my report with you.

I might say that I am still living on the farm that I began farming on 45 years ago, and my statement is for protection of my water rights.

In order to save time, I would like to file this with you.

Mr. ASPINALL. Unless there is objection, the request of the gentleman will be granted, and his statement will be placed in the record as if read by him.

Hearing no objection, it is so ordered.

(The statement referred to follows:)

STATEMENT OF J. H. SILBAUGH, PRESIDENT OF THE BOARD OF DIRECTORS, NORTH SIDE CANAL CO.

My name is J. H. Silbaugh. I am president of the board of directors of the North Side Canal Co. I am also a member of the Committee of Nine. This committee has been called the Board of Directors for Water District No. 36 for distribution of the waters of the Snake River for use in the Snake River Valley. I am also a director of the Idaho State Reclamation Association representing the lower Snake River Valley. I settled on the north side tract in 1910 and farmed my own farm there until my retirement a few years ago. I am making this statement on behalf of the company and the board of directors and on behalf of water users for the lower Snake River Valley. I also made a statement before the Senate subcommittee in opposition to S. 1333.

The stockholders of the North Side Canal Co., by unanimous vote at its annual meeting on January 15, 1955, adopted a resolution in opposition to the proposed Federal Hells Canyon project. Similar action had been taken at prior annual meetings of the stockholders and represents the overwhelming sentiment of the water users. Moreover irrigation districts and canal companies representing the overwhelming majority of the irrigated acres in southern Idaho, comprising approximately 2½ million acres, have passed similar resolutions in opposition to a Federal Hells Canyon project.

The North Side Canal Co. represents an area of approximately 160,000 irrigated acres in Jerome, Gooding and Elmore Counties lying north of Snake River. This project, constituting one of the largest private irrigation systems in the country, is a Carey Act project which was initiated in 1903. It is now in an advanced stage of development. The land is extremely fertile and highly productive. All irrigated crops do exceptionally well, we have fine roads, schools, homes and a number of progressive communities, the largest being the town of Jerome.

We now have an adequate water supply but only after many years of hardship and struggle. We had an early filing for natural flow from the Snake River, to be diverted at Milner, when the project was initiated, which proved to be wholly inadequate. Later we acquired from the United States storage capacity in Jackson Lake Reservoir and after American Falls Reservoir was constructed in 1926 we purchased additional storage space in American Falls Reservoir. In 1952 we purchased storage space in Palisades Reservoir and additional space in American Falls Reservoir.

Our major opposition to the proposed Federal Hells Canyon project is that we believe it would constitute a threat to our existing water rights, as well as a threat to future water rights that will be required to irrigate many thousands of acres yet undeveloped. The future development of this area depends upon the full use of the water of Snake River and its tributaries. We are definitely and unalterably opposed to any limitation on the future irrigation development in Idaho and we feel that the Federal Hells Canyon Dam, if constructed, would be a definite threat, not only to future development but also to our existing water rights. We are very much concerned regarding our existing rights because of the position the Federal Government has taken that private appropriators can acquire no water rights in navigable streams and we do not believe that any protective language can be placed in the bill which would protect us in the future. Water is Idaho's most precious asset and we intend to get the maximum use of it before it leaves our State. We don't want our water rights jeopardized by big storage dams downstream costructed by the Federal Government for power purposes which can't be filled except in high-water years.

This is an old story to Idaho irrigators. For years they have fought against the creation of a Columbia Valley Authority. They oppose a Federal Hells Canyon project for the same reasons they oppose a CVA. It would be an effective wedge for Federal domination and control of our water.

In this connection, I was present at the annual meeting of the Idaho State Reclamation Association at Idaho Falls last April and I had the great privilege

of hearing Undersecretary of the Interior Davis address the association on this matter. With respect to our water rights he said:

"Must we have nothing but Federal domination of this region and of the lower river—the Columbia? Is that the only possible answer which will satisfy some of these proponents of Hells Canyon and other federalizing plans? Being just a country lawyer myself, I have some sort of an interest in the preservation of land values and the preservation of property rights, and in my book water rights in the West are property rights, and they shouludn't be taken away from the people in whom they are vested by the Federal Government or anybody else.

"The whole economy of this region is based upon the fact that water rights acquired under the laws of the States are just as valid and just as valuable property rights as is the land itself, and whether there be Federal legal authority to do it or not, I say it should not be exercised in the face of these rights acquired and held for many years in good faith and upon which the economy of this and similar regions depend. And yet, continued, exclusive construction in this basin not only inevitably results in the Federal disturbance of local property rights with reference to water, but it inevitably also results in the exclusive Federal domination of electric power."

Furthermore, I believe that future storage on the Snake River should be where the floods occur. I testified on this matter at the hearing in Idaho Falls last February before the Army Corps of Engineers. These hearings were held for the purpose of getting grassroots opinion on the question of flood control on the upper Snake and its tributaries. Some 1,200 water users attended the meeting in Idaho Falls and all of those who made statements were in full accord in urging upstream storage in order to harness the Snake River and prevent floods in the upper Snake River area where the floods occur.

The upper Snake River Basin still faces a real flood-control problem which can only be solved by constructing reservoirs above the areas subject to flood damages and not on the Snake River below the areas in Idaho that are subject to flooding. Throughout the upper Snake River area on the main stream as well as some of the tributaries, there is a real flood-control problem. It is now generally recognized that additional storage on the Snake River should be provided by reservoirs on the upper tributaries of the Snake River. Construction of such reservoirs would also serve the very valuable purpose of providing additional supplies of water to large areas of land which are now inadequately irrigated, particularly in dry years.

The storage space in Palisades Reservoir was oversubscribed by some 400,000 acre-feet and this was for storage water to be used primarily for supplementing the irrigation of lands already under irrigation. Moreover, these are in excess of 1 million acres of new land that can be put under irrigation as soon as water is made available by upstream storage.

I was present at the hearing before the Senate subcommittee in Boise on April 4, and our Governor Smylie expressed my views in better words than I can use when he said:

"I would also be remiss in my duties as chief executive if I did not state clearly, and without equivocation, that Idaho must always insist that every dollar of Federal money available for our State be used in constructing those upstream projects which will facilitate the use and reuse of our waters within our boundaries before they pass irrevocably for use in the downstream States. Water is Idaho's prime asset in the competing economies of the Northwest. Stored in the upper reaches, these waters will give the dual flood-control advantage heretofore mentioned, will be available for use and reuse in irrigation as they pass through the several hundred miles of our Idaho Snake River Basin. They will be available for use in hydroelectric production at all of the projects throughout the length of the Snake River, as well as those further downstream on the Columbia. In short, their storage at these upper points will inevitably result in the comprehensive development of the river."

We are further opposed to the construction of a Federal Hells Canyon Dam because we believe that where private capital is ready, willing, and able to develop power sites on the Snake River they should be allowed to do so. More than 90 percent of the irrigation development in the Snake River Valley has been initiated by private enterprise. We fully endorse the partnership policy of water resource development. It has worked in Idaho in the past and we see no reason why it won't work in the future. Jackson Lake and American Falls Reservoirs are typical examples. Approximately half the cost of these large reservoirs was contributed by private individuals and companies.

I emphasize again, however, that our major concern is the protection of our existing water rights which we believe are placed in jeopardy by the proposed project.

Mr. ASPINALL. The Chair now calls Mr. N. V. Sharp, of Filer, Idaho. Identify yourself for the record, Mr. Sharp.

STATEMENT OF N. V. SHARP, FILER, IDAHO

Mr. SHARP. Mr. Chairman, my name is N. V. Sharp, of Filer, Idaho.

I am like Mr. Silbaugh, I want to save time. I am very sorry I had to come this far and could not discuss this matter with you gentlemen. This is about the fourth time I have been in Washington and have been different places after being authorized by the water users on Snake River. I would like to say that I have been on the board of directors of the Twin Falls Canal Co., the largest canal company in the State of Idaho, and one of the largest in the West, since 1924.

I have been on the Committee of Nine that you have heard so much about for the last 28 years, and I have been chairman of that committee for the past 8 years.

I would like to impress very much on you gentlemens' minds the very fact that what you saw in this chart in green, from Twin Falls clear to the Wyoming State line—we live in that area and represent the water users of that area. I think I should yield at this time so other members should be heard.

Mr. ASPINALL. You make the request that your statement be included as if read; is that correct?

Mr. SHARP. Yes.

Mr. ASPINALL. And you wish to have included at the end of your statement the resolution of the Committee of Nine?

Mr. SHARP. And also the State grange.

Mr. ASPINALL. And also the resolution from the State grange which has to do with your statement?

Mr. SHARP. Yes.

You will note in my statement the Committee of Nine, the people on the Snake River, have been meeting very often, especially since this bill and S. 1333 was before the Senate. We have been meeting often and were authorized to come back again this time.

Mr. ASPINALL. Unless there is an objection, the statement of Mr. Sharp will be inserted in the record of the hearing as if read, and the statement and resolution attached thereto will be inserted in the record of the hearing in the regular manner.

Hearing no objection, it is so ordered.

(The statement referred to follows:)

STATEMENT OF N. V. SHARP, OF FILER, IDAHO, CHAIRMAN, COMMITTEE OF NINE

Mr. Chairman and members of this committee, my name is N. V. Sharp. I reside at Filer, Idaho. I am a retired farmer. I have lived in Idaho since 1907, have raised a family, and have owned and operated my own farms until a few years ago when I retired.

I am a member of the board of directors of Twin Falls Canal Co. and have been since 1924. I was president of Idaho State Reclamation Association for 12 years (from 1937 until 1949) and, upon retiring as president, I was honored with a life membership in that association. I also spent 4 years on the State Water

Conservation Board of Idaho, by appointment of the Governor, and I was 1 of the 10 he appointed to go to Salt Lake City in 1932, at which time the national reclamation association was formed. I was elected to the first board of directors and have served continuously in that capacity since that time, almost 24 years.

I have served as a member of the Committee of Nine in water district 36 for approximately 28 years, and I have been chairman for the last 8 years.

Referring more specifically to the Committee of Nine, under Idaho law, water districts cover sections of the streams designated by the State reclamation engineer, and my particular district includes all lands irrigated from Snake River at and above Milner Dam, or a total of one and a quarter million acres. Those who divert water, either as individuals or as canal companies or irrigation districts, meet annually on the first Monday in March. They have votes in proportion to the amount of their individual water rights; and at these meetings they elect a water master, provide for his assistants and expenses, and in general set up a way of delivering water out of the natural streams. In the case of water district 36 they also elect a committee of nine which, in effect, is the board of directors and the policymaking body, each member representing a different section of the river.

At the annual meeting in March of this year, attended by several hundred officers and directors of canal companies and irrigation districts, a resolution was passed unanimously opposing construction of the Hells Canyon Dam.

Following this meeting, the Committee of Nine authorized me to appear at the hearings in May before the Senate Subcommittee on Irrigation and Reclamation, in opposition to S. 1333, and I did appear and made a statement in opposition to this bill. Since those hearings, the Committee of Nine, at a special meeting on July 6, 1955, passed another resolution reaffirming and expressing its determined and unalterable opposition to any legislation having for its purpose the authorization of a Federal Hells Canyon Dam. The Committee of Nine again authorized me to appear at this hearing in opposition to H. R. 7419, 7430, 7439, and 7440. I am attaching a copy of that resolution as a part of my statement.

I have also been requested and authorized by the master of the Idaho State Grange to present to this committee the same statement that was made by the Idaho State Grange before the Senate subcommittee hearings on S. 1333 in Boise on April 4, 1955. This statement outlines the stand taken by the Idaho State Grange on numerous occasions against any of the Federal Hells Canyon bills that have been introduced. I am attaching to my statement a copy of the letter of the master of the Idaho State Grange authorizing me to present its statement, and I am also attaching the statement of the Idaho State Grange.

There are a number of reasons why we are opposed to the authorization of a Federal high Hells Canyon Dam.

It is not an irrigation project; it is a power project, pure and simple. It does not even pretend to have any irrigation features. Future development and prosperity of southern Idaho depends upon the full utilization of the waters of the Snake River, and its tributaries for irrigation. There are now approximately 2,600,000 irrigated acres in the Snake River Valley and it is estimated that there will be an additional 1,200,000 acres of new lands irrigated within the next 50 years.

We are definitely opposed to any limitation on the future irrigation development in Idaho and we feel that the high Federal Hells Canyon Dam would be a definite threat, not only to future development, but also to our existing water rights.

We in Idaho are very much concerned regarding our existing rights because of the claims by the Federal Government that private appropriators can acquire no rights in navigable streams. There is a continuous threat by the Federal Government to extend Federal jurisdiction and control, irrespective of State laws. If the high Hells Canyon Dam should be authorized, we are fearful that the Federal Government would then have an instrumentality whereby it could and would exercise control of the Snake River and every little stream and creek within the State of Idaho which could be classified as a tributary. We believe such control would jeopardize and interfere with and endanger the water rights of the Idaho farmers in southern Idaho, whose activities constitute the real economy of the State. There is already too much control by the Federal Government and we do not care to encourage more.

Furthermore, we are opposed to the project because private capital is ready, willing, and able to develop the power sites in the Hells Canyon stretch of the river. Upward of 90 percent of irrigation development in the Snake River Valley has been initiated by private enterprise under State laws.

We are fully in accord with the partnership concept of water resource development, which means, as we interpret it, local determination of projects to meet local needs, and Federal participation only where needed, without Federal control. The partnership plan of development is not new in this State. The great bulk of our irrigation development was constructed in this fashion. Individuals and companies spent their own time and money in building irrigation dams, canals, and other irrigation works. Later, when supplemental water was needed, requiring large storage dams, these were constructed with Federal funds. Many of our great storage structures were partnership affairs. Jackson Lake, at the headquarters of the Snake, was built approximately with half private funds and half Federal funds. Also, approximately half the cost of the great American Falls Reservoir was paid cash in advance to the Government by private canal companies and irrigation districts before construction even began.

Furthermore, if this proposed dam is authorized and constructed by the Federal Government instead of private capital, the State of Idaho will not receive the taxes so badly needed by the State for the future development of its own projects. The increased taxes payable by private power companies to the State, as well as to the counties, which would be affected, will greatly lighten the heavy taxation load now borne by the citizens and industries of the State.

I am informed that evidence in the record of the Federal Power Commission hearing indicates the State of Idaho, alone, and its public bodies, would receive annually approximately $4 million in taxes if these projects are developed by private enterprise. Over a 50-year license period this would amount to approximately $200 million. This does not include the tremendous sum that would be paid to the Federal Government in income taxes. It is estimated that it would provide the United States with estimated income-tax revenue in excess of $5 million in 1 year, or approximately $250 million over a 50-year period, based upon current income-tax rates.

In conclusion, we are further opposed to these bills because the question whether the Hells Canyon stretch of the river should be developed by the Federal Government or by private enterprise has been submitted to the Federal Power Commission. This is the agency that Congress has given the function and responsibility to decide this question. Hearings on the Idaho Power Co.'s applications extended over a year, and the question has now been submitted to the Federal Power Commission. It has all the technical data before it. That Commission should be permitted to decide this question without any political interference.

RESOLUTION OF COMMITTEE OF NINE

Whereas on March 7, 1955, at the annual meeting and election of the waterusers of district No. 36 at Idaho Falls, Idaho, a resolution was unanimously adopted by the waterusers of district No. 36, representing the ownership of a million and a quarter acres of irrigated lands, expressing their determined opposition to the authorization of a Federal Hells Canyon Dam; and

Whereas hearings were held commencing on May 4, 1955, on S. 1333, a bill to authorize the construction of a Federal Hells Canyon Dam, before the Senate Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, at which time spokesmen for the Committee of Nine expressed their determined opposition to the enactment of S. 1333; and

Whereas hearings are now scheduled to commence on July 11, 1955, before the House Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs on H. R. 7419, 7430, 7439, and 7440, which bills are identical to S. 1333, to authorize the construction of a Federal Hells Canyon Dam; and

Whereas the proposed bills encroach on the right of the State of Idaho to expand and enlarge its use of irrigation water in the future: Now, therefore, be it

Resolved, That the Committee of Nine, at a special meeting on July 6, 1955, at Idaho Falls, Idaho, reaffirms and expresses its determined and unalterable opposition to any legislation having for its purpose the authorization of a Federal Hells Canyon Dam.

This is to certify that the above and foregoing resolution was adopted at a meeting of the Committee of Nine of water district No. 36 at Idaho Falls, Idaho, on the 6th day of July 1955, and is a true and correct copy thereof.

COMMITTEE OF NINE,
By N. V. SHARP, *Chairman.*

Attest:

ALEX O. COLEMAN, *Secretary.*

IDAHO STATE GRANGE

JULY 8, 1955.

W. E. Adams, Master, Box 166, Eagle
Ferrin G. Harlan, Secretary, Box 211, Caldwell
Executive Committee:
Cecil Hill, Nezperce
Bert Higgins, Idaho Falls
Emmil Jerome, Kuna
Lecturer: Mrs. Otto Moeller, Post Falls
Treasurer: I. T. Creed, Twin Falls
Overseer: Fred Jessup, Grangeville

This is to certify that N. V. Sharp, of Filer, Idaho, a grange member, has been requested and authorized to present the same statement before the House Interior and Insular Affairs Committee hearings on the bill to authorize a high Government dam at Hells Canyon as was presented before the Senate hearings on S. 1333 in Boise.

This statement outlines the stand taken by the Idaho State Grange on numerous occasions against any of the Federal Hells Canyon bills that have been introduced.

This statement against such legislation is attached and it is requested it be made part of the record of this House hearing.

W. E. ADAMS,
Idaho State Grange Master.

STATEMENT OF WILLIAM E. ADAMS, MASTER, IDAHO STATE GRANGE, EAGLE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

My name is William E. Adams; I live at Eagle, Idaho; and I am master of the Idaho State Grange.

The Idaho State Grange, through action of its delegates in four consecutive State conventions, has voted its opposition to impairment of the water rights of Idaho citizens under legislation introduced in the Congress calling for construction by the Federal Government of a high dam at Hells Canyon. Complete copies of the resolutions adopted at these four meetings are made a part of this statement in opposition.

As it was so clearly stated in the 1952 resolution, "the Idaho Constitution and Idaho water laws provide safeguards of the irrigation water supply as to parties and persons over whom the State of Idaho has jurisdiction, but does not provide protection as to the Federal Government or any of its agencies * * *. Those safeguards apply when Snake River is developed by private enterprise, but have no standing if a Federal hydroelectric project is constructed on the river."

It has been clearly demonstrated that no action short of an amendment to the Constitution of the United States can assure Idaho of freedom from possible adverse action in the allocation of water from the streams of the State. Therefore, on behalf of the Idaho State Grange and acting under directed authority expressed in the resolutions which follow, I wish the record to show that the Idaho State Grange is unalterably opposed to legislation now pending calling for construction of a Federal dam at Hells Canyon, since it fails to afford adequate protection to the vital water resources of the State of Idaho.

Actions approved and adopted by the delegate body of the Idaho State Grange in the four most recent annual sessions:

Burley, Idaho, 1951: Report of irrigation and reclamation committee:

RESOLUTION NO. 6—OPPOSING HELLS CANYON DAM

Whereas the Bureau of Reclamation has proposed that it be authorized to build a high dam at the Hells Canyon site at an estimated cost of about $433 million for the production of about 800,000 kilowatts; and

Whereas the Idaho Power Co. is ready and willing to develop 695,000 kilowatts in 5 low-head dams covering the same section of Snake River Canyon at a cost of $176 million through private financing; and

Whereas private enterprise financed by private funds would be able to produce power at an estimated cost of $253 per kilowatt compared to $417.48 per kilowatt financed by public funds on a Government project; and

Whereas, since there is no present shortage of power in the Snake River Valley, the Bureau of Reclamation proposes to sell most of the power that a high dam would develop in the distant Northwest, while the five low-head dams would be built as the inland empire developed; and

Whereas five low-head dams built by private enterprise would contribute under present rates approximately $3 million annually in ad valorem taxes to the local area, while a Government dam would contribute nothing; and

Whereas, since any dams built in this location would be purely power dams and would produce no benefits in the way of reclamation or irrigation, they might retard the development of the desert area above the power location by demanding water which could be used elsewhere for irrigation; and

Whereas we are opposed to the Government entering into competition with private enterprise: Now, therefore, be it

Resolved, That we go on record as opposing the proposed Hells Canyon Dam as planned by the Bureau of Reclamation.

Adopted.

Coeur d'Alene, Idaho, 1952:

HELLS CANYON

It was moved by Merlyn C. Gersma, master of Central Park Grange, that this delegate body reaffirm their 1951 action on Hells Canyon dam as follows:

"Exactly the same resolution as was adopted at the 1951 session."

Adopted.

Nampa, Idaho, 1953: Report of the irrigation and reclamation committee:

RESOLUTION NO. 14—DEVELOPMENT OF THE SNAKE RIVER

Whereas full utilization of the irrigation, reclamation, and power resources of the Snake River is essential to the continued development and prosperity of Idaho agriculture; and

Whereas water is the lifeblood of Idaho agriculture, and any curtailment of the supply would work to the great detriment of farmers and their families, both on lands presently irrigated and more than a million acres of potentially productive lands yet to be reclaimed; and

Whereas the Idaho Constitution and Idaho water laws provide safeguards of the irrigation water supply as to parties and persons over whom the State of Idaho has jurisdiction, but does not provide protection as to the Federal Government or any of its agencies; and

Whereas those safeguards apply when Snake River is developed by private enterprise but have no standing if a Federal hydroelectric project is constructed on the river; and

Whereas private enterprise with taxpaying capital is prepared to bring about the immediate development of Snake River in a manner best meeting the needs of public interest by construction of Oxbow, Brownlee, and Hells Canyon Dams, under terms contained in the license applications and testimony presently before the Federal Power Commission; and

Whereas the United States Department of the Interior has announced that the proposed Federal dam at Hells Canyon would have no physical connection with any reclamation project, that the Federal project is not authorized and that there is small probability of funds for its construction being available for several years, while it is important to the area that power production be obtained rapidly; and

Whereas the United States Department of the Interior has further announced that the Federal cost per kilowatt would be more than 2½ times that required for private development; that the two proposals would develop the same hydraulic head for power production and that the flood-control benefits would be the same: Now, therefore, be it

Resolved, That we reaffirm our previous resolutions and again go on record as opposing the Hells Canyon Dam as proposed for construction by the Federal Government. (Resolution sent in by Twin Falls Grange in Twin Falls County.)

Adopted.

RESOLUTION NO. 22—OPPOSED TO HELLS CANYON

Whereas there has been submitted to us by the State grange a list of resolutions that will be up for consideration by the next session of the State grange to be held in Nampa, Idaho, in December 1953; and

Whereas a certain resolution sponsored by the Deary Grange covers the subject of endorsement of Hells Canyon Dam; and

Whereas this subject has been before the State Grange of Idaho a number of times in the past and after full consideration of the subject by the delegate bodies of the State grange the subject of Hells Canyon Dam has been defeated each time it was presented; and

Whereas this subject has been twice turned down by congressional committees after most extensive and careful consideration; and

Whereas the subject is now before the Federal Power Commission on hearings in which a large volume of testimony presented showed that the farming industry of southern Idaho considers it will be irreparably damaged and destroyed should the water of Snake River be diverted from irrigation use to development of power at Hells Canyon; and

Whereas in a number of years the flow of the river was not sufficient to take care of present irrigation needs let alone enough to take care of prospective further irrigation developments which must be taken care of with water of the Snake River; and

Whereas agriculture is the basic industry of the State of Idaho and thousands of grange members of our State are directly involved as irrigation farmers using Snake River water; anything that would hurt their interests is of extreme importance to the State of Idaho and to the Idaho State Grange: Now, therefore, be it

Resolved, That we go on record as opposing the resolution of Deary Grange favoring Hells Canyon; and be it further

Resolved, That the State grange having repeatedly acted in opposition to the question, that in the interest of peace and harmony among grangers that this controversial question be dropped as a matter before this State grange session. (Resolution sent in by Mapleleaf Grange in Kootenai County.)

Adopted.

Twin Falls, Idaho, 1954: Report of the irrigation and reclamation committee:

THE HELLS CANYON CONTROVERSY IN THE IDAHO STATE GRANGE

Whereas the Idaho State Grange is composed of a general representation of the agricultural people of the State of Idaho; and

Whereas it is the duty of this broad and general representation of the agricultural people of the State of Idaho to set forth, in general principles, their requirements regarding this controversial issue; and

Whereas the action taken by the Idaho State Grange should be of a nature such that our feeling of fraternal brotherhood in our grange should not be jeopardized; and

Whereas the Idaho State Grange in effect has been directing a school of thought which has become a partisan political issue and to press this issue further would only lead to additional dissension on the part of members who have the opposite political view; and

Whereas the issue of Hells Canyon is a composite of several issues rather than one, which, in rules of parliamentary law and fairness to reason, should not be grouped as a single issue: Now, therefore, be it

Resolved, That the controversial issue of public power versus private power be omitted from the work of this session of the Idaho State Grange; and be it further

Resolved, That the Idaho State Grange go on record as favoring the development of the bountiful natural resources of the State of Idaho to the greatest intensity that is economically feasible, provided that in doing so the water rights of the people on the Snake River watershed be guaranteed an indisputable prior right to all future claims to water flowing or stored in the Snake River or in its tributaries—be the claims from public power or from private power sources.

Report adopted.

Mr. COLEMAN. Just one moment, Mr. Chairman. I have here a statement by the president of our association, Fred Cooper, who was unable to come, and a letter to Congressman Budge, which I would like to place in the record.

Mr. ASPINALL. Does the gentleman from Idaho, Mr. Budge, wish to have his letter inserted also?

Mr. BUDGE. I have no objection. I have not seen the letter but I have no objection.

Mr. ASPINALL. Unless there is objection, the statement and the letter will be included in the record.

Hearing none, it is so ordered.

(The documents referred to follow:)

IDAHO STATE RECLAMATION ASSOCIATION,
Boise, Idaho, June 15, 1955.

Hon. HAMER BUDGE,
Member of Congress,
Washington, D. C.

DEAR HAMER: You are familiar, I believe, with the position taken by the Idaho State Reclamation Association over a period of years in opposition to Federal proposals for a Hells Canyon project, and with the statements filed with the Senate Subcommittee on Irrigation and Reclamation by myself and others.

Since the House Committee on Interior and Insular Affairs has scheduled hearings on S. 1333 and companion bills, and since these hearings will cover the same ground gone over many times previously, I am asking that you submit for the House committee record the statement I made to the Senate subcommittee on behalf of the Idaho State Reclamation Association, copy of which is enclosed.

I am also enclosing a copy of Resolution No. 10, Opposition to Federal Hells Canyon Project, unanimously adopted by the Idaho State Reclamation Association in annual meeting at Idaho Falls on April 26, 1955, which should be presented to your committee.

I can assure you, but you already know, that Idaho irrigators are fully as concerned about the Hells Canyon Federal proposal as they were with the Columbia Valley Authority threat, and have demonstrated a remarkable unanimity in their opposition.

I know you will do everything possible to defeat this proposal.

Very truly yours,

FRED M. COOPER, *President.*

OPENING STATEMENT

My name is Fred M. Cooper. I live at Grace, Idaho, where I operate a farm and engage in livestock raising. I have resided in southeastern Idaho as a farmer for 41 years. I am the State senator from Caribou County, and am a member of the Bear River Compact Commission.

I appear here as president of the Idaho State Reclamation Association, which was organized in 1937 and has an active membership of more than 200 local irrigation districts and canal companies which altogether operate the irrigation works on approximately 2 million acres of irrigated land in Idaho. For years the association has been the spokesman for irrigators of the great Snake River Basin of southern Idaho. A further description of the association is to be found in my prepared statement.

This hearing purportedly has been called to get a grassroots expression from the people regarding S. 1333 and the companion measures introduced in the 84th Congress to authorize Federal construction of the Hells Canyon project.

I, for one, was greatly dismayed and alarmed to find the original schedule of the hearings omitted any consideration of the people most directly affected, namely, the farmers and irrigators of southern Idaho. As a last-minute concession, this 3-hour hearing was permitted, of which only 90 minutes are allowed for all of the organizations and individuals who oppose this measure. In contrast, 2½ days are allowed to downstream areas where the people are not directly affected as are the irrigators of southern Idaho. Even here at Boise the great majority of Idaho irrigators are bypassed. The distance from Boise to the heart of the Snake River's great irrigated empire is as far as from Washington, D. C., to New York, and hundreds of Idaho irrigators are unable to drop their work and travel the distance.

Two things are increasingly plain: (1) The Federal Hells Canyon Dam is a political dam and (2) its promoters are concerned very little about the Idaho irrigators, present and future, who will have to supply the water.

Even during these days of courtship by the proponents to gain support for the project by means of solemn assurances that irrigation water rights under

State law will be forever protected, the emphasis is placed on what people as far away as Portland think rather than on what Idaho irrigators think. Under these circumstances, just how much consideration would be given to Idaho water rights once the project were constructed and placed in operation? I think the answer is, "Not very much."

This same question goes to the heart of the position taken by the Idaho State Reclamation Association. Time and time again by resolution the association has stated its unalterable opposition to the Federal project at Hells Canyon. In most cases the votes have been unanimous. To my knowledge there is not a single irrigation district or canal company in Idaho that has ever gone on record in favor of a Federal Hells Canyon Dam. The granges and farm bureau groups in the affected area have taken firm stands against it in overwhelming numbers.

Gentlemen, if you are seeking grassroots opinion from the people most directly involved, there is no question but that Idaho irrigators are violently opposed to the Federal Hells Canyon Dam.

It is not a reclamation dam. Not a single acre of land would be irrigated from its reservoir. It is a power dam pure and simple, and therein lies its potential threat to irrigation in Idaho. The Federal Government has paramount rights to the use of our waters, and those rights are superior to State law. All the Federal Government needs is a vehicle for the exercise of those paramount rights.

We have drifted a long way toward Federal domination and control of our water resources. Every step taken toward that end brings us nearer the day when the so-called paramount rights can be exercised. If the proponents of Hells Canyon can sell Congress this bill of goods, it's a short step to subordinating Idaho water rights to a Federal power bureaucracy more responsive to downstream power consumers than to upstream irrigators.

The Idaho State Reclamation Association over the years has consistently opposed creation of a Columbia Valley Authority. We oppose the Federal Hells Canyon Dam for the same reasons. It would be an effective entering wedge for authority domination and control of our water.

STATEMENT BY FRED M. COOPER, GRACE, IDAHO, PRESIDENT OF THE IDAHO STATE RECLAMATION ASSOCIATION, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, APRIL 4, 1955

My name is Fred M. Cooper, and I am a farmer and livestock grower. I am the State senator representing Caribou County, chairman of the irrigation and water resources committee of the Idaho Senate, and member of the Bear River Compact Commission.

I am making this statement as president of the Idaho State Reclamation Association and on behalf of that association's officers and members.

The Idaho State Reclamation Association was organized in 1937 and has an active membership of more than 200 local irrigation districts and canal companies which altogether operate the irrigation works on approximately 2 million acres of irrigated land in Idaho, which is more than 90 percent of the total. For years the association has been the spokesman for irrigators of the great Snake River Basin of southern Idaho.

The Idaho State Reclamation Association is a truly grassroots organization of farmers and irrigators. The association selects its officers in annual meetings, and all officers are men directly connected with irrigation, either as individual farmers or as officers of irrigation districts and canal companies. The board of directors of the association is representative of the different geographic sections of the State's irrigated acreage. The association is financed by irrigation districts and canal companies on a pro rata acreage basis, and by business firms whose livelihood is related to agriculture and whose contributions are solicited by the association. Voting power in the association is limited to bona fide representatives of irrigated land.

Officers of the Idaho State Reclamation Association testified at length before the House Subcommittee on Irrigation and Reclamation at Washington, D. C., in 1952 in opposition to H. R. 5743, which was similar in its essentials to the measure now under consideration (S. 1333). At the conclusion of the 1952 hearing, the subcommittee voted unanimously, in a bipartisan action, to table H. R. 5743 indefinitely.

Since the time of the 1952 hearing, members of the Idaho State Reclamation Association have held three annual meetings, and on each occasion have adopted strong resolutions opposing the proposed Federal project at Hells Canyon. The gist of those resolutions is that each legislative measure to authorize the Hells Canyon project is a "public power bill and not a reclamation measure, that they would endanger existing and future water rights in Idaho, and would lead to Federal instead of State control of the waters of Snake River and its tributaries."

These expressions of grassroots opinion from the people most directly affected, and most seriously affected, have been unanimous in most instances. To my knowledge there is not a single irrigation district or canal company in Idaho that has ever gone on record in favor of a Federal Hells Canyon Dam. There is not a major statewide farm organization in favor of it. The granges and Farm Bureau groups in the affected area have taken firm stands against it in overwhelming numbers. Only last month, the water users of district 36, which comprises some 1,250,000 acres of irrigated land in the Snake River Basin, in annual meeting at Idaho Falls, reiterated their opposition in no uncertain terms.

Gentlemen, I submit this question: If the subcommittee is sincerely desirous of seeking grassroots opinion from citizens most directly affected by the Hells Canyon proposal, and is equally desirous of heeding that grassroots opinion, how can you fail to discard Senate bill 1333 and all similar measures?

The fact that this issue recurs in the Congress with monotonous regularity at the insistence of downstream politicians and Federal-power-or-nothing fanatics is devastating evidence confirming the fears of Idaho water users. If the Federal dam at Hells Canyon can be sold to Congress, it's a short step to the subordination of Idaho water rights to a Federal power bureaucracy more responsive to downstream power consumers than to upstream irrigators.

It is fascinating to contemplate the fact that most of the tubthumpers for the Federal Hells Canyon Dam are the same people who have espoused with equal vigor the creation of a Columbia Valley Authority, an idea presently laid on the shelf for future reference merely because citizens of the Pacific Northwest have rejected it. The Idaho State Reclamation Association over the years has consistently opposed creation of a CVA. We oppose the Federal Hells Canyon Dam for the same reasons. It would be an effective entering wedge for authoritarian domination and control of our water.

We are not impressed by frantic efforts of Hells Canyon proponents both in and out of Congress to reassure irrigators that irrigation water rights secured under State law would be protected under S. 1333 and other similar bills. There is no question but that the Federal Government now holds, under the Constitution, a paramount right to all of the waters of the Snake River and its tributaries. The present Congress, we believe, would refuse to exercise those paramount rights. Subsequent Congresses might readily do so.

The best practical protection to water rights now is the absence of a means, which the Federal Hells Canyon Dam would afford, of exercising the acknowledged paramount rights of the Federal Government. Bear in mind that Idaho irrigators, present and future, must supply the water to make the Hells Canyon power generators operate and to fill and refill the reservoir. Competent engineers have testified under oath that in future years a short water supply, and when maximum development of upstream irrigation has been achieved, there is not enough water in Snake River to do both jobs. At that time the inevitable conflict of interest arises between irrigation and downstream power.

Every indication to date leads to the inescapable conclusion that those who advocate the Federal project would give scant consideration to irrigation if they were then in positions of authority. The scheme of the proponents and their glib assurances of water-right protection are not compatible ideas.

Idaho irrigators are accustomed to watermasters of their own choosing. They are not prepared to accept a political watermaster with divided loyalty, however benevolent such watermaster may appear at any particular time.

To irrigators, many of the plans for so-called comprehensive basin development seem to presume a master control in the hands of politicians far removed from the grassroots. They see the Bureau of Reclamation getting away from its original purpose, that of irrigating land, and placing most of its emphasis upon the generation of hydroelectric power. The Hells Canyon Dam is not a reclamation dam. Not a single acre of land would be irrigated from its reservoir. It is a power dam, pure and simple, and therein lies its potential threat to irrigation in Idaho.

The Idaho State Reclamation Association is wholly in favor of progress and development. We simply do not wish to get away from the principles under which irrigation and reclamation have grown to provide a thriving agricultural economy in our State.

Because S. 1333 is, in our opinion, a departure from these principles; because the building of a gigantic Hells Canyon Dam would place in the hands of the Federal Government an instrumentality which might subsequently be used to adversely affect the irrigation waters which are the lifeblood of our State, we oppose this bill, S. 1333, and all similar legislative measures.

Let nonfarm pressure groups concern themselves with matters directly affecting their welfare. Let downstream promoters of political dams stay within their own boundaries. Let planners, authority seekers, and would-be watermasters find a more fertile field.

This is Idaho's water—let it alone.

IDAHO STATE RECLAMATION ASSOCIATION RESOLUTION NO. 10—OPPOSITION TO FEDERAL HELLS CANYON PROJECT

(Adopted in annual meeting on April 26, 1955)

Whereas S. 1333 and H. R. 4719, 4730, 4739, and 4740 have been introduced in this session of the Congress of the United States, and are bills entitled "A bill to authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and related purposes"; and

Whereas for 6 years, through 6 sessions of 3 full Congresses, bills in one form or another for the authorization of a Federal Dam at Hells Canyon has been continuously before Congress, all of which have failed of passage; and

Whereas it appears from analysis of said bills that each is entirely a public power bill and not a reclamation measure, that they would endanger existing and future water rights in Idaho, and would lead to Federal instead of State control of the waters of the Snake River and its tributaries; and

Whereas section 1 of the bill makes it clear that the authorization of the Federal Dam at Hells Canyon is under the constitutional power reposing in the Federal Government, and the Federal Government alone, "to regulate commerce among the States," and shows conclusively that the authorization of the Federal Hells Canyon Dam would rest on this constitutional power of the Federal Government to regulate, control, and use the waters of navigable rivers and their tributaries, regardless of the provisions of the State's constitution and laws; and

Whereas these Federal constitutional powers render meaningless any so-called protective language placed in the bills for the purpose of protecting irrigators whose water rights, secured under State law, are their most priceless possessions; and

Whereas the future growth and development of Idaho depends upon its ability to expand and enlarge the future consumptive and beneficial use of water in new areas of land, as well as the preservation of all water rights appurtenant to its present irrigated lands; and

Whereas Idaho has thousands of acres of land which may be economically irrigated, and the only source of water to adequately supply the present and future needs of lands now irrigated, or which may be hereafter irrigated, in the State of Idaho, is the Snake River and its tributaries: Now, therefore, be it

Resolved by the Idaho State Reclamation Association in its annual meeting assembled at Idaho Falls, Idaho, on April 25 and 26, 1955, That we are unalterably opposed to the enactment of S. 1333 and the identical companion bills in the House of Representatives, or any legislation having similar objectives; and be it further

Resolved, That we authorize representatives of this association to appear before the appropriate committees of the Congress to testify regarding our position; and be it further

Resolved, That copies of this resolution be sent to the Idaho congressional delegation, and that copies be sent to the chairmen of the Senate and House Committees of Interior and Insular Affairs.

Mr. ASPINALL. The Chair recognizes the gentlewoman from Idaho, Mrs. Pfost.

Mrs. PFOST. Mr. Chairman, I would like to read to Mr. Sharp a section of the hearings before the Committee on Interior and Insular Affairs, United States Senate, 81st Congress, 1st and 2d sessions, H. R. 5472. On page 392 is a letter by Mr. Sharp to the Honorable Joseph O'Mahoney, chairman, the Senate Interior and Insular Affairs Committee.

I am informed you will have hearings on H. R. 5472 February 15. We believe the bill should contain specific provisions properly safeguarding present and future consumptive uses of water by upper Snake River water users. It is my understanding that at present the bill does not contain such provision. It is the opinion of the Snake River Compact Commission for Idaho that the bill should be amended so as to include such safeguards. There would be no objection to the bill if the bill were amended in accordance with this suggestion.

(Signed) N. V. SHARP,
Chairman of Snake River Compact Commission for Idaho.

As you know, Mr. Sharp, we have provided in the new bill the provision for the protection of upstream water rights, and you suggested then that if protective language were placed in the bill you would have no objection to it.

Mr. SHARP. Could I intervene just a minute? I do not remember this letter. What is the date of that letter, please?

Mrs. PFOST. February 14, 1950.

In other words, it appears that in 1950 you thought legislation protecting water rights on the Snake River above Hells Canyon could be enacted in the Hells Canyon legislation. Now am I led to believe that you think they cannot?

Mr. SHARP. No, I beg your pardon, Congresswoman Pfost. I do not remember writing any such a letter and——

Mrs. PFOST. It is a part of the Senate hearings. It is on H. R. 5472 at page 392 of the Senate hearings of the 81st Congress.

Mr. BUDGE. Will the gentlewoman yield to me?

Mrs. PFOST. Yes.

Mr. BUDGE. Mr. Sharp, I think what the lady is getting at is whether you have changed your position as to whether or not the rights of the upstream users should be protected. Have you changed your position?

Mr. SHARP. I would say this: If I wrote such a letter as that—and I am speaking to Congressman Budge and Congresswoman Pfost—if I wrote such a letter as that, I did not know anything about the provisions in the Constitution that gives Congress paramount right over the water rights, if I wrote such a letter.

Mrs. PFOST. Then I would like to quote further, Mr. Sharp, another letter dated February 14, 1950, and also addressed to Chairman O'Mahoney, and I quote:

Twin Falls Canal Co. is informed that H. R. 5472 does not contain specific provisions for protection of upper water users in the consumptive use of the water of the Snake River. It is the considered judgment of the board of directors that appropriate provision should be incorporated in the bill to fully protect the upper water users in their consumptive uses of Snake River waters for the domestic and irrigation purposes and urges that the bill not be approved by your committee until amended so as to include proper safeguards for present and future consumptive use. If and when so amended, this company would not voice objection to the bill.

TWIN FALLS CO.,
By W. A. COINER, *President.*

I just wondered why you have changed your opinion.

Mr. SHARP. If I did, I am very sincere in what I am stating—if I wrote such a letter, or Mr. Coiner—of course, he has passed away. I do not know anything about what he wrote. But I am very sincere, Congresswoman Pfost, if I wrote that letter you just read, that then I did not know what the constitutional provision was with regard to the water rights. Certainly I would not agree to write any such letter today in that I do know what the Constitution provides for.

Mrs. PFOST. Even though the bill would provide for the protection of upstream water users, you could not go along with that?

Mr. SHARP. I realize this: That this Congress can do one thing and the next Congress can do something to upset that. I do realize, too, that you cannot pass a law that is contrary to the Constitution of the United States and make it stand in the courts.

Mrs. PFOST. Thank you, Mr. Sharp. Of course, I am just as interested as you are in protecting the irrigation rights of the State of Idaho.

Mr. SHARP. I hope you are.

Mrs. PFOST. I do not go along at all with the theory that upstream water rights cannot be protected.

No doubt you know the Idaho Power Co. has a power dam at the Swan Falls Dam site, which is approximately 15 or 20 miles south and east of my hometown of Nampa. Surrounding the dam is dry, arid, sagebrush land. Are you familiar with that area?

Mr. SHARP. Not too familiar down that far down the river. I have been in there, but I am not too familiar.

Mrs. PFOST. You then will be interested to know that one of my friends in Canyon County who owns several hundred acres of irrigated as well as dry land, attempted to irrigate a 120-acre tract lying adjacent to the Swan Falls Reservoir by pumping from the Snake above the dam. After many, many weeks and months of negotiations with the Idaho Power Co., he was prohibited from placing a pump in the river above the dam even though he agreed to pump only at high river stage.

Mr. BUDGE. Will the gentlewoman yield to me?

Mrs. PFOST. Not at this point. This gentleman was told by the Idaho Power Co. that he could place a pump below the dam some 300 to 500 feet, whatever the regulation is. This meant he would have a pump lift of 300 to 400 feet to get the water on his land and the cost of pumping was so great he simply could not afford to do it. So his 120 acres still lie idle growing only early spring grasses, and to date he has not been granted permission to irrigate his dry land out of the Snake River above the Idaho Power Co. Swan Falls Dam.

Now it would appear that so far as upstream water rights are concerned, certainly his upstream irrigation rights were jeopardized by a private power company dam. Yet Swan Falls produces a very small amount of power—I do not know the exact figure—it is somewhere around 12,000 kilowatts.

Mr. Chairman, if the committee would like to have it, this gentleman would submit a statement setting forth in detail his experience with the Idaho Power Co.—a statement that would show how private power development has restricted his upstream irrigation rights.

Mr. SHARP. I do not know, Congresswoman Pfost, what this has to do with this bill.

Mrs. PFOST. It does not have to do with the bill, it has to do with the statement you made—the protection of upstream water rights. I am just as interested, Mr. Sharp, as you are in protecting upstream water rights.

Now it would appear if a man has no right to the water of the Snake River until he comes down past the last Idaho Power Co. dam, then there is infringement upon upstream water rights by private power companies.

Mr. SHARP. Could I say this, Mrs. Pfost?

Mrs. PFOST. Yes.

Mr. SHARP. As I understand it, the Idaho Power Co. or any other corporation, individual, or otherwise, they must comply with the water laws of the State of Idaho. Anybody except the Federal Government. That is what concerns me.

Mrs. PFOST. Do you mean to say that the Federal Government does not have to comply with the constitution of the State of Idaho?

Mr. SHARP. They have the constitutional right under the commerce clause.

Under the commerce clause the Federal Government can come in and condemn water rights, can take water on any navigable stream or its tributaries. Is that right?

Mr. BUDGE. Will the gentlewoman yield to me?

Mrs. PFOST. Not at this point.

Mr. BUDGE. I would appreciate it if the lady would yield. Not for this examination. I have a statement that I would like to make with regard to the remainder of the hearings. You are taking all of my time.

Mrs. PFOST. A point of——

Mr. PILLION. Will you yield for just a minute? I am just wondering as to the relevancy——

Mr. ASPINALL. Just a minute. We will proceed in regular order. Does the gentlewoman yield to Mr. Budge?

Mrs. PFOST. I have not yielded to Mr. Budge.

Mr. ASPINALL. Does the gentlewoman yield to Mr. Pillion?

Mrs. PFOST. No; I will not yield to Mr. Pillion.

Mr. ASPINALL. The gentlewoman will proceed.

Mrs. PFOST. Mr. Chairman, what is the plan for the time of the committee?

Mr. ASPINALL. The chairman has no plan. The chairman's plan is he entered into an agreement with proponents and the opponents of this legislation. The agreement expires at 15 minutes after 12.

Mr. BUDGE. I have three very important witnesses I think this committee should hear.

Mr. ASPINALL. The Chair understands the gentleman's position.

Mr. BUDGE. Mr. Sharp is not an attorney. Mrs. Pfost is not an attorney. I do have an attorney you can examine at great length on that question.

Mrs. GREEN. Will the gentlewoman yield to me?

Mrs. PFOST. Yes.

Mrs. GREEN. Mr. Sharp, could you give me any example during the last 100 years when the Federal Government has ever come into any area and taken away the water rights?

Mr. SHARP. On Snake River?

Mrs. GREEN. In any area in the United States, where any Congress has passed legislation which has done away with legislation by previous Congresses?

Mr. SHARP. I think the records will best speak for themselves.

Mrs. GREEN. You do not know of any specific cases?

Mr. SHARP. I do not care to at this time—I have not the records with me. I think Santa Margarita is one case.

Mrs. GREEN. The what?

Mr. SHARP. The Santa Margarita case is one.

Mrs. GREEN. Where the United States Government came in and——

Mr. SHARP. Pardon?

Mrs. GREEN. Where the Federal Government took away water rights?

Mr. SHARP. Then had quite a lot of trouble down there; yes.

Mrs. PFOST. Mr. Chairman, I would inquire of my colleague from Idaho. You have three witnesses that have not been heard at all?

Mr. BUDGE. I have 2 witnesses who have not been heard at all and 1 who made a brief introductory statement and who has a statement which he wishes to make to the committee.

Mrs. PFOST. I will forego any further questioning of these three witnesses in order for your other witnesses to be heard.

Mr. BUDGE. I thank the lady.

Mrs. GREEN. Mr. Chairman?

Mr. ASPINALL. The Chair recognizes the gentleman from Nebraska, Dr. Miller.

Dr. MILLER. I would like to yield, if I may, to Mr. Budge.

Mr. ASPINALL. You have that right.

Mr. BUDGE. I thank the gentleman from Nebraska. I would like to get these other witnesses on, and then, if time permits—or if the committee wants to meet this afternoon to conduct the cross-examination this afternoon, that is fine with me, but I do want to get the testimony of these witnesses.

Mrs. GREEN. A point of inquiry.

Mr. ASPINALL. The lady will state it.

Mrs. GREEN. It was my understanding when we adjourned yesterday that Mr. Houston was the first one who would appear before the committee for cross-questioning. Could we follow that order of procedure?

Mr. ASPINALL. The Chair has been very careful to protect himself in the procedure he has taken this morning and has asked for unanimous consent each step of the way. These men are before the committee in orderly procedure according to the wishes of the committee, and we cannot call Mr. Houston until we get through with them.

The Chair recognizes the gentleman from Nebraska for any further questions he may have.

Mr. WESTLAND. Will the gentleman yield?

Dr. MILLER. I yield.

Mr. WESTLAND. I have one question I would like to ask Mr. Coleman.

On the next to the last page of your statement, Mr. Coleman, you say that when this matter of the high Hells Canyon Dam has been put before the people of Idaho it has been overwhelmingly defeated.

Could you expand on that to some extent?

Mr. COLEMAN. At our last election, when the two parties drew up their platforms, the Democratic Party put in theirs the full support of Hells Canyon Dam. Of course, the Republican Party could do nothing else but oppose it. You know what happens during a campaign.

The Governor and the Senator who campaigned on the other side and the Congressman who ran against Mr. Budge were snowed under. The Senator won by 54,000 over his opponent. That is Senator Dworshak. Governor Smylie won by several thousand—in the twenties I believe—over his opponent. Mr. Budge——

Mr. BUDGE. Will the gentleman from Washington yield to me?

Dr. MILLER. I have the time. I am about ready to move to dismiss the witnesses and have some others come on unless there are some more questions.

Mr. BUDGE. I appreciate the witness' offer to tell what my majority was, but I do not see where——

Mr. COLEMAN. He asked what I meant by it.

Mr. BUDGE. What I would like to do is get these other witnesses on. Time is running out.

Dr. MILLER. I felt it had no place in this argument here. I know other witnesses are here and you want to get to them. If it is in order, I think we should dismiss these witnesses.

Mr. ASPINALL. Is there any objection to dismissing the present witnesses?

Mr. EDMONDSON. I would like to ask one question.

Dr. MILLER. I will withdraw the request.

Mr. EDMONDSON. If you will yield for one question, Doctor.

Dr. MILLER. I yield.

Mr. EDMONDSON. I would like to ask the witness, Mr. Coleman, on that same point, if he would regard the reelection of Mrs. Pfost of Idaho as a mandate against the Hells Canyon in the district which she represents.

Mr. COLEMAN. Idaho is a peculiar State in that manner. The north part of the State is practically all labor, the south part is practically all agriculture. That made the difference.

Mr. EDMONDSON. No further questions.

Dr. MILLER. I do not want to shut off debate. I would like to move these three witnesses be dismissed and other witnesses called upon.

Mr. ASPINALL. Is there a second?

Mr. WESTLAND. Second.

Mr. CHRISTOPHER. A point of inquiry.

Mr. ASPINALL. The Chair recognizes Mr. Christopher for a point of inquiry.

Mr. CHRISTOPHER. If we excuse these three witnesses now, will we have an opportunity to ask these gentlemen some questions at a later time?

Mr. ASPINALL. That depends entirely upon the wishes of the committee.

Mr. CHRISTOPHER. I have some questions I would like to ask Mr. Coleman, but I do not want to keep them on the stand. I do not want to gum up the works.

Mr. ASPINALL. The minutes are passing. Does anybody wish to be heard in opposition to the motion?

Mrs. PFOST. What is the motion, Mr. Chairman?

Mr. ASPINALL. That these witnesses be excused at this time.

All those in favor of the motion signify by saying "Aye."

Those opposed will say "No."

The motion is carried and it is so ordered. The witnesses are excused.

The regular procedure would be to call Mr. Houston back. Do you wish to call Mr. Houston back at this time?

Mr. BUDGE. I would like to call Mr. Welsh, who has a statement on behalf of the National Reclamation Association. I think perhaps he could summarize his statement.

Mr. ASPINALL. Is there any objection?

Mrs. GREEN. I object.

Dr. MILLER. I move that Mr. Welsh be called to the stand and we listen to his statement.

Mrs. PFOST. A point of inquiry.

Mr. BUDGE. What is the point of inquiry?

Mr. ASPINALL. Just a minute [gaveling]. You caused me to break the gavel stand here.

May the Chair state to the members of this committee that they understand the rules of the House, I think, as well as the Chair does, and we should proceed in order.

What is the gentlewoman's point of inquiry?

Mrs. PFOST. I would like to ask approximately what length of time Mr. Welsh will require to make his statement.

Mr. ASPINALL. That is not a point of inquiry.

Dr. MILLER. I will ask unanimous consent that we hear Mr. Welsh.

Mr. ASPINALL. I will advise the lady it is two pages.

A unanimous-consent request has been made that we hear Mr. Welsh.

Is there any objection?

Hearing none, it is so ordered.

STATEMENT OF WILLIAM WELSH, NATIONAL RECLAMATION ASSOCIATION

Mr. WELSH. Mr. Chairman, with your permission, I would merely like to state that the president of our association, C. Petrus Peterson, from Lincoln, Nebr., has forwarded this statement to me and has asked that I make the request it be inserted in the record in these hearings. In the interest of time I would like to forego the privilege of reading it and ask that it be inserted in the record.

Mr. ASPINALL. Is there any objection?

Hearing none, it is so ordered and the statement will be admitted as if read.

(The statement referred to follows:)

STATEMENT BY C. PETRUS PETERSON, PRESIDENT, NATIONAL RECLAMATION ASSOCIATION, WASHINGTON, D. C.

The National Reclamation Association takes note of H. R. 4719 and similar bills now pending before the Congress which have been referred to this committee for consideration.

Five of our seventeen directors represent our membership in the five States in the Columbia Basin: Washington, Oregon, Idaho, Montana, and Wyoming. Each of said five directors, together with our directors from Utah, South Dakota, and California, have expressed their opposition to S. 1333 which is identical to the bill now under consideration by this committee. On their behalf we submit the following:

The Federal Power Commission under the acts of Congress is charged with the responsibility of passing on the applications pending before it. Extensive hearings have been had during which all parties in interest have been heard and a voluminous record has been compiled. In this hearing all engineering and related problems have been fully explored in a way which it is quite impossible to duplicate in this congressional hearing.

Particularly the conflict between the plans of present and potential water users for irrigation in the regions primarily concerned, on the one hand, and the hydroelectrical development contemplated under H. R. 4719 on the other, has been fully developed.

Orderly procedure, we submit, should require the promulgation and publication of the findings of the Federal Power Commission in due course.

It is not our purpose to attempt to prejudge the issue before the Federal Power Commission. Our position is that the public interest will be best served if orderly procedure is followed and the agency of Government charged with the duty of determining the issue be permitted to state its conclusions based on the complete record now in its hands.

I share the views of Under Secretary of the Interior Davis. In addressing the Idaho State Reclamation Association on this matter at its annual meeting in Idaho Falls on April 25, he said:

"I was under the vague impression that we had a Government of law in this country. I was under the vague impression that when the Congress set up an impartial tribunal vested with special powers to determine special questions and gave it a staff of 300 or 400 people to assist at arriving at wise engineering and financial conclusions, that the traditional American way was to abide by the decisions of that tribunal, and I may say frankly that I am not impressed by those persons who are afraid to submit their cause to the judgment of a tribunal of that nature and who attack the [illegible]ct, abuse the judge, and seek ways and means to bypass and to detour the decision for fear that it may be against them."

We urge that the Federal Power Commission report be announced and that their findings and recommendations be accepted.

The basic desire of our membership in these five States in the Columbia Basin is that orderly progress shall be made in the development of the resources of the area.

Mr. BUDGE. Mr. Chairman?

Mr. ASPINALL. Mr. Budge.

Mr. BUDGE. I move that Mr. R. P. Parry be permitted to make the statement he has requested to make before this committee at this time.

Mr. ASPINALL. You have heard the motion.

Mr. SAYLOR. Second.

Mr. ASPINALL. You have heard the motion and the second. All those in favor signify by saying "Aye."

Those opposed, "No."

The motion is carried.

Mr. Parry, will you take the witness stand.

STATEMENT OF R. P. PARRY, TWIN FALLS, IDAHO, COUNSEL, IDAHO POWER CO.—Continued

Mr. PARRY. Mr. Chairman, I am the same R. P. Parry who made a brief statement yesterday on the general factual situation of the Snake River Basin and its relationship with the Columbia River Basin.

I have prepared and filed with the clerk a detailed statement which I will not, on account of the time, in any way attempt to read or even to thoroughly cover this morning.

I would appreciate it if I could for a few moments summarize quite briefly some of the high points in the matter as we see it.

As was mentioned yesterday, my legal experience in the past has been chiefly devoted to representing canal companies and irrigation districts in what we call Central Snake River Basin, representing the American Falls Reservoir District, some 500,000 acres; the Twin Falls Canal Co. of about 200,000 acres; the North Side Canal Co., about 160,000; and various other ones.

I likewise have been special counsel for the Idaho Power Co. in the Federal Power Commission proceedings which have been referred to.

For some several years I have likewise been chairman of the Idaho Compact Commission charged with the duty of representing that State in the negotiations of a Columbia River compact. I have been chairman of the legal committee of that interstate compact group and have served on that to the extent that I have been able to find time to do so while not compelled to be in Washington on various hearings.

Collectively those whom I represent—and I am of course in no way concealing the fact that I am appearing here as attorney for the Idaho Power Co.—but collectively we object to the construction of the high dam and consequently the passage of the pending legislation for a variety of reasons.

As has been mentioned by Mr. Riter and other witnesses, the amount of water that can be stored in the high dam without conflict with the production of power is only that amount of water which passes the point in question during the so-called storage period, which is about 4 months in the year, and any statements as to the amount of water flowing past Hells Canyon Dam in the entire year are entirely misleading.

There is attached to my statement a chart and an enlargement of it has now been placed on the easel, showing that in a typical period from the years 1929 to 1937, inclusive, the amount of storable waters as shown on the chart, and likewise in a table which is attached to my testimony, and in none of the years of that period would there be within a million acre-feet of enough water to fill the Hells Canyon Dam if this usable storage were evacuated.

That is the concrete situation that disturbs the irrigation users, and it disturbs the Idaho Compact Commission, because, regardless of what is written in this bill in the way of protective language, we know that in any future period when there will be a cycle of years similar to that which existed historically in the past, there will be a conflict between the demand for irrigation water in this upper area that I described yesterday and the demand for this large Hells Canyon installation, which, with the dam itself, its accompanying transmission lines, these various downstream installations we have talked about—regardless of how much we argue about what the law is, there will be an actual physical conflict. It will not be possible to fill all the usable space of the dam during the storage period and at the same time supply upstream irrigation rights.

Speaking for a moment from my position as chairman of the Idaho Compact Commission, we have endeavored to get a compact which would be an agreement among the States, as you gentleman know, which would protect Idaho on its upstream consumptive uses. And we have had considerable argument with the downstream States, and finally we compromised with them and said that we would agree that

our protection should be limited to those rights which would be established to and through the year 2000. The States of Oregon and Washington have refused to enter into such a compact, although it was ratified by the Legislatures of Idaho, Wyoming, and Utah.

The statement was made by a Senator from Washington over in the Senate that that compact would never be ratified.

That points up the reason why the irrigators of Idaho have a very real fear, and we believe the law supports us, that since this dam in Hells Canyon reach has no reclamation connected with it at all that, if it is justifiable, it is justifiable at all under the commerce clause, that any protective language in this legislation will be, of course, subject to any subsequent action by this or any other Congress because, obviously, you cannot amend the Federal Constitution by an act of Congress. And that is the real conflict in rights which seriously disturbs those who are interested in irrigation in Idaho.

From the point of view of the power company, the situation that confronts the company is one of immediate, present, and dire shortage. The Idaho Power Co. has 120,000 customers. We were compelled to reduce deliveries of power to the great elemental phosphorus furnaces at Pocatello last year.

Some 2 years ago, foreseeing the delay that was going to occur in the Federal Power Commission hearings, the company made an interim agreement with the Utah Power & Light Co., whereby Idaho financed the earlier construction of the steam unit at Salt Lake to the extent of 100,000 kilowatts to make power available during the summer seasons of 1955 and 1956, 50,000 in 1957 and 1958, and then we come to the end of our use. That power from steam down in Salt Lake came on the Utah line the 1st of June. We are using it all now. We are going to be short.

So, so far as the power consumers of the area, they are the real party in interest when we talk about it from a power production angle; it is not the investors in the power company or those who manage it.

Obviously, the power for the area must be supplied. We are not going to let the people go without power. So that actually the decision in this matter now is this: Are the power users in the service area of the Idaho Power Co. going to be allowed to have power from the cheapest source available in their area, namely, the hydroelectric power of the Snake River? Or is the Idaho Power Co. going to be compelled to build right on the banks of this great hydroelectric stream steam plants? And we are right there today.

Mr. BUDGE. Mr. Chairman?

Dr. MILLER. A parliamentary inquiry, Mr. Chairman.

Mr. ASPINALL. The gentleman will state it.

Dr. MILLER. I think that members on both sides want to hear one or two other witnesses. I wonder if it would be in order to ask unanimous consent that the other two or three witnesses who are back there come up here now and submit to questions. Maybe we could have 15 minutes each, divided on each side. Is that satisfactory?

Mr. ASPINALL. Does the gentleman make the request?

Dr. MILLER. I make that as a unanimous-consent request.

Mr. BUDGE. Reserving the right to object, Mr. Parry has not concluded his statement and Mr. Sloan, who is a very distinguished witness, one of the coauthors of the Pick-Sloan plan, is here waiting to be

heard. I do not want to get to cross-examination until we have their statements.

Mr. EDMONDSON. I wonder if it could be modified so at 12:15 to have the witnesses available for 15 minutes equally divided to each side for cross-examination?

Dr. MILLER. That is all right.

Mr. EDMONDSON. Would that be satisfactory and permit Mr. Sloan to make his statement?

Mr. ASPINALL. Is there any objection?

Hearing none, it is so ordered.

How much more time do you need, Mr. Parry?

Mr. PARRY. I think I can conclude in 3 or 4 minutes.

The other point that I would like to summarize is this:

As I stated in the general statement yesterday, which I would like to discuss further but it is covered in my written statement, in essence the only difference between these two proposed plans is where we are going to build this additional 2,800,000 acre-feet of storage if it is needed.

The company plan provides a million, which will provide the same amount of production at site and downstream through all plants as would a million in the high dam.

Mr. Riter testified that during most of the years of the period they will not use a million out of the high dam. So it is an even deal that far.

It is our thought that if 2,800,000 more acre-feet are needed they should be provided upstream, either on the Snake River itself, tributaries, or the Clearwater, where it can be provided, as has been indicated, much more economically, and where it will perform every function it would perform if located at Hells Canyon, and in addition many other functions.

Finally, it is our position that the difference in power production between the three low dams and the single high dam during the period and at the time when there is such difference is so economically costly that the high dam is economically infeasible. The evidence shows that you could build the three lower dams and you could build modern steam plants over at Portland and Seattle where the great shortage is, and in that way eliminate costly transmission lines; and that under the most extreme valuation of the production of the high dam, taking the highest production that is claimed for it, you could operate the three dams, and then you could produce the difference between them at the cost of steam for about a third what the additional cost would be for the additional storage in the high dam.

Likewise, the annual operating cost, the difference between operating the high dam and the 3 low dams, under the most extreme view in favor of the high dam is about three times the value of power that would be at any time obtained as of the difference between the 2 projects.

For that variety of reasons, I very hurriedly close my statement and announce that as our basic reason for opposing this legislation.

Mr. ASPINALL. Thank you very much, Mr. Parry. You may remain at the witness table.

Without objection, the statement of Mr. Parry handed to the committee will be made a part of the record as if read.

Hearing no objection, it is so ordered.

(The statement referred to follows:)

STATEMENT OF R. P. PARRY

My name is R. P. Parry. I am an attorney residing in Twin Falls, Idaho, where I have practiced law for 34 years. My office has long represented and now represents several large canal companies and irrigation districts and a major portion of my practice has been in connection with water rights and irrigation matters.

I am representing the Idaho Power Co. as special counsel in the proceedings before the Federal Power Commission, wherein they are seeking licenses to build three dams in the so-called Hells Canyon reach of the Snake River. I am appearing here as their attorney to state their position with respect to the proper development of that stretch of the Snake River.

We oppose the pending bills for three basic reasons:

First, the company needs to start immediate construction of its proposed plants in order to provide the generation most reasonable in cost most immediately available.

On June 27, our company reached its highest peak of its entire history, some 408,300 kilowatts. We have 374,000 kilowatts available.

So the situation that confronts our company is a reality. We must plan to carry our load. So far we have been a 100 percent hydroelectric—one of the few in the United States. That being true, in order to carry our load, we must plan to carry it under critical water conditions. It does not seem to our responsible executives that we can ever put our consumers in a position in which they would be, if we tried to underguess the amount of generation that we would require.

On the other hand, even ordinary prudence would seem to indicate that we should always in one sense, perhaps overguess—or at least ample-guess and of course, being a hydroelectric operation, our production of necessity, comes in rather large blocks. That is the only economical way of bringing it in.

Second, if any Federal funds are available for expenditure in the Snake River Basin, they should be expended for the construction of upstream storage, both on the main stem above American Falls, and on the major tributaries such as the Clearwater and the Payette.

And third, because the dam proposed by this pending legislation is not economically feasible, is unnecessary, and would be an indefensible expenditure of public funds.

For the last several years, Idaho Power Co. has been striving, with every facility at its command, to expand its power generation facilities for the benefit of power users, both those in its own service area, and in the Pacific Northwest as a whole. In 1947, it initiated proceedings for the orderly development of this stretch of the Snake River below Weiser, by filing application for a preliminary permit for the first step, the Oxbow project.

The overall project which the Idaho Power Co. is seeking permission to build is, in size, fully comparable with any of the other large projects proposed in the Columbia River which will cost many times more in public money. Initially, the installed generating capacity will be approximately 800,000 kilowatts, with provision for additional installations up to 1,175,000 kilowatts. This larger installation will be effective principally for peaking purposes and will be justifiable when the region needs hydro peaking power in that amount in cooperation with steam plants. These installations will develop the full available head of 602 feet (exactly identical with that of any other proposed structure in the area) and will, from the very beginning have a peaking capability of 900,800 kilowatts, which will be increased, when additional installations are made, to 1,300,000 kilowatts. The assured advent of a project of this size would accomplish untold good, not only in the company's service area, but in the whole Pacific Northwest.

This development will be achieved by a combination of three dams, even the smallest of which, Oxbow, is more than twice the height of the famous Bonneville Dam, and includes about the maximum amount of storage capacity which is economically justifiable in that stretch of the river. References to the company's proposed structures as small dams are not only often maliciously intended, but are not based on facts.

The structure furthest upstream is the Brownlee Dam, 395 feet high, 4 times higher than Bonneville. Or, for another example, equivalent in height to a 30-story building. It will be the 15th highest dam in the country. This will create a reservoir 57½ miles long which will impound 1½ million acre-feet of water, of which 1 million acre-feet will be located above the minimum head and be available for power production and flood control. Here will be installed ini-

tially 360,400 kilowatts of generating capacity with peaking capability of 414,400 kilowatts.

This dam, and each of the others, will, in conformity with the specifications of the Army Corps of Engineers, provide spillway capacity of 300,000 cubic feet per second, capable of passing more than twice the recorded amount of water ever known to have flowed through this section of the river. Likewise, the Brownlee Dam will have the proper amount of discharge capacity, specified by the Army engineers, to provide for speedy evacuation and consequent use of the storage space for flood control. The water stored behind the Brownlee Dam will be used, not only through its own generators, but also through those of the two lower plants; and thereafter through all dams on the lower Snake and Columbia Rivers, however many may be built. The power production head of the company's 3 plants will never be less than 501 feet, even after all usable storage is evacuated, which will give greater dependable peaking capabilities than any other plan proposed for the development of this stretch of the river.

Next, downstream from Brownlee is the 200-foot-high Oxbow Dam which, as mentioned, is double the height of Bonneville Dam, and higher than any business building in Washington. Initially, there will be an installed capacity of 151,000 kilowatts with a peaking capability of 173,600 kilowatts. An existing tunnel at this site, constructed in connection with a small plant installed at this point by a predecessor company makes it possible to complete this plant and have it actually producing power at a very early date.

The third plant of the combination is the Hells Canyon plant, 320 high, about as tall as a 25-story building, and with an operating head 46 feet higher than Niagara. Initially, there will be built 272,000 kilowatts of installed capacity with a peaking capability of 312,00 kilowatts. The development of the Hells Canyon reach by these three plants provides great flexibility both in construction scheduling and in operation.

Brownlee Dam can be completed in from 36 to 38 months from the time the go-ahead signal is received. At Oxbow, if construction is started before August 1 in any year, the first unit can be completed and be on the line within 1 year's time, and the whole project finished in 16 months. And if started later in any calendar year, Oxbow can be fully completed in not more than 18 months. Hells Canyon can be completed in from 36 to 38 months from the time permission is granted. Or, to put it another way, the entire project of 3 plants, if constructed concurrently, can be constructed and fully producing in about 36 to 38 months.

Idaho Power Co. has been a member of the Northwest power pool since its inception about 14 years ago. The Northwest power pool has been the vehicle whereby all electric systems in the Northwest have completely coordinated operation of their generating resources to carry the regional load as efficiently as possible. The result has been great benefits to both the individual systems and the region as a whole. These benefits from coordinated operation have been so great and so obvious that it is inconceivable that the Northwest power pool will not continue to exist. Judging from experience in other parts of the country, coordinated operation of resources continues to expand over wider and wider areas. As loads grow, it has been found that further mutual benefits accrue from coordinated operation of large power pools in adjacent regions.

Already connected with the Northwest power pool, through its existing ties with the Montana Power Co. and Utah Power & Light Co., the Idaho Co. is now constructing a new 230,000-volt line from Baker to LaGrande, Oreg., which will provide a tie between its system and the Federal Bonneville system. Other lines, if any, that may be required to afford a tie between the two systems, will be built as needed. In other words, speedy construction of the Idaho Co.'s plants is the one known and practical method for the speediest relief of the critical power shortage in the States of Oregon and Washington. Until impeded by the delay in these projects, the Idaho. Co. had never had a power shortage in its area. Once this delay is removed, that situation will be speedily remedied, and also additional contributions will be available for the region to the West.

The amount of usable storage provided in the company's plan, namely, 1 million acre-feet was arrived at, after extensive studies by the Idaho Co's engineers, as being the maximum amount of storage that would be economically justified at this point on the Snake River. The amount is neither accidental nor a figure picked out of the air. These engineers were confronted with the task of ascertaining the maximum amount of storage which, under conditions that could reasonably be expected on the river, could be developed at a construction cost within the realm of good business judgment. Also, they took into account the amount of storage which could be operated so that it would not damage,

but on the contrary, assist the only important navigation involved, namely, that on the Snake River below the dams and above Lewiston and the amount of storage justifiable in that reach of the river as flood control.

The company engineers took all of these factors into account. And I pause to inquire whether anyone would think that these engineers had any ulterior motive in selecting a resorvoir with 1 million acre-feet of usable storage? Or if they would not have recommended a reservoir with a larger storage capacity if it had been economically justifiable?

Engineers representing both Federal and non-Federal bodies seem agreed that the period covered by the years 1929–48 is a very typical period in the Columbia River Basin, containing, as it does, both a series of drought years and a series of years with above average streamflow. In evaluating the filling possibilities of any reservoir in this area, one cannot simply take the flow of the stream and assume that that amount of water will necessarily be available for storage in the future. In any of these projects, we must necessarily think of a 50-year period at a storage site on the Snake River above the mouth of the Salmon. Studies must be made each year to ascertain the amount of storable water there, taking into account the flows both in the Snake River at that point, and in the Columbia River. For it is obvious that no economic good would be achieved, but rather that harm would be done, if any effort were made to store water at a time when it is required for power production. Whenever the flow on the Columbia below the mouth of the Snake is less than that usable by the turbines installed in the largest plant on the lower Columbia, storing water in the Hells Canyon reach will reduce generation at the lower Columbia plants. It is obvious that water cannot be stored in Hells Canyon whenever such refilling would reduce power production in the Snake River, and the lower Columbia plants, below the amounts needed by the Northwest Power Pool as a whole.

The costs of constructing these projects have been carefully worked out, and have been reviewed and rereviewed. It is now known that, on present costs, the maximum costs will be for Brownlee $63,594,800; for Oxbow $23,604,500; for Hells Canyon $45,800.800. This totals $133 million for the whole project. Not only is the company certain that these projects can be constructed for this sum, but likewise, it has open for its acceptance, if it desires, the unqualified firm offer of the internationally famous construction company, Morrison-Knudson Co., to complete these projects and turn them over to the company as going concerns for that sum of money. In all probability, the plants will cost the company less than this. Already firm commitments have been obtained from manufacturers of generators and electrical equipment which will enable the company to make a saving on those items alone of $8 million. It is entirely probable that like savings can be made on many other items. In any event, because of this firm commitment of this great contracting firm, there can be no question but that the top cost of the overall project will not be more than $133 million. This power will then cost, on installed capacity, only $176.45 per kilowatt at Brownlee, $156.30 per kilowatt at Oxbow, and at Hells Canyon only $168.40 per kilowatt. This is extremely cheap hydro power in any man's language.

The company willingly held its application in abeyance for 3½ years from June 1947 to December 1950, while the matter of Federal construction in that area was debate at length in both the 81st and 82d Congresses; then it could wait no longer. Federal construction having been denied by those Congresses, the Idaho Power Co. has since been strenuously seeking permission to proceed with the construction of its proposed project. Delaying tactics have been continually used in an effort to impede the orderly process of a determination of the Idaho Power's application by the Federal Power Commission. Only now, after hearings and proceedings extending over 3 years' time, are we about to receive the Power Commission's decision in those proceedings.

The ones who have suffered chiefly from this needless delay are, first, the power consumers and residents of the Idaho Power Co. service area, and, secondarily, the whole Pacific Northwest. The rapid expansion of irrigation pumping in the Idaho Power Co.'s area, probably the greatest in the whole United States, has created a large summer demand for power, which occurs coincidentally with the lowest streamflow. In order to provide for this greatly increased summer load, Idaho Power has been forced to undertake the costly stopgap measure of underwriting construction of new steam power capacity by Utah Power & Light Co. Under this arrangement, the Idaho Power Co. will obtain 100,000 kilowatts of steam power from June 1, 1955, through September 1956, and June–September 1957, diminishing to 50,000 kilowatt-hours in other parts of 1956–58,

in which last year the arrangement terminates. The whole generation picture in the company's area is acute. We have the anomalous situation of irrigation farmers, located in an area of vast potential hydroelectric production, being compelled to use a substantial portion of high-priced steam power during their pumping season, due to the unwarranted delay in allowing this company to proceed with an orderly expansion of its system.

Actual shortages have occurred to such an extent that last summer the company was, for the first time, compelled to reduce some of its interruptible service to the great electric furnaces located in its territory, which manufacture elemental phosphorus. The situation has likewise discouraged the establishment of additional facilities in southern Idaho for refining phosphate rock, although there are those anxious to proceed as soon as power is available. Particularly this delay has prevented the Idaho Power Co., a member of the Northwest Power Pool, from maintaining its delivery of large amounts of surplus power into this pool where it is badly needed in the western group. To that extent, the delay has impeded industrial expansion in the whole Northwest.

Because of the great delay, the Idaho Power Co.'s demand for immediate additional power has become so imperative and so great that the company plans to immediately start simultaneous construction of the largest project, that is, the Brownlee project, and the Oxbow project. As has been mentioned, the latter can have power on the line within 12 months if work can be started in any year before August 1. By the time the access roads can be constructed to the Hells Canyon site proper the company will be ready to promptly begin construction of that structure, so that it, too, will be completed within the allotted time. Because of the great and impending power shortage in the Northeast, there is no question in our minds but that adequate contracts for any surplus power from this project and for the construction of the necessary additional interconnecting lines will have been arranged so that there will be in effect substantially simultaneous construction of the three plants which make up the overall project involved. Where else in the Pacific Northwest is it possible to get a plant with this tremendous and very usable production capacity available in such a short time?

The production of these plants is badly needed both in the Idaho Power Co. service area and the Northwest as a whole. Because of the delay that has ensued, the production of the Brownlee project will be required in the company's service area by the time that that structure is completed, even if that can be started during the current year. And so also will be the production of the Oxbow plant if the construction of that installation is started simultaneously with Brownlee. As mentioned, production can be achieved from that source within a minimum of 1 year if construction is started in any year before August 1. Joint studies currently being carried on by the affected companies indicate a power shortage in the Idaho-Montana-Utah area by the summer of 1957, as matters now stand. The production of the Hells Canyon plant will in any event be absorbed by the company as that plant is completed in due course in an orderly construction program. However, the problem is sufficiently pressing to indicate the need of accelerating the immediate and simultaneous construction of all of these units so that the Idaho Co. as a member of the Northwest power pool can supply its own area needs, which is a part of the overall Northwest need, and still contribute its excess power to the power-short region on the coast at as early a date as possible and continue to supply this surplus to those areas until the overall construction program of both the region as a whole and the company's own service area catches up with the need.

Operation of the company's project will be completely integrated, both electrically and hydraulically, with the Norhwest power pool as a whole. Ample facilities for this integration will be provided as and when needed. Just recently there have been power shortages in the Northwest which required the cutting off of interruptible power to industrial customers and in turn caused these establishments to use high-cost steam power, much of it from obsolete plants. Not only is there the impending shortage in the company's immediate area I have just mentioned, but also the Governors' Power Conference Committee for the Pacific Northwest indicates that, even taking into account all construction now definitely planned, there will be, under median water conditions, a deficiency of some 889,000 kilowatts by 1960–61. This deficiency will increase until

it will reach, by 1963–64, the vast total of 1,961,000 kilowatts. Power from the Idaho Power Co.'s project can be ready and available in time to assist in meeting this anticipated load growth if the company is given prompt permission to proceed.

In this respect, if I can change hats for a moment, to the extent possible, I will talk, not as the attorney for the power company, which, of course, I am, but in my responsibility as chairman of the compact commission for the State of Idaho.

This question of paramount rights of the Federal Government under projects which are authorized under such language as is contained in this bill is not a myth. It is not something which has been dreamed up by anyone to throw a red herring, shall we say, in this thing, but it is a reality. It is one which as many as 18 lawyers have spent endless time arguing.

On an interstate stream such as the Columbia, even though you have the various water laws of all of the seven affected States, which vary in some detail, as has been pointed out, under the New River decision and others, the power of the Federal Government under the commerce clause goes probably to the furthest tributary clear up in Yellowstone Park, if they wanted to exercise it.

The position of the upstream States in their compact negotiations is that they desire to have established the same thing which is purported in this bill to be given; namely, priority to the upstream consumptive uses as against the present downstream nonconsumptive uses, and we know there will be more large dams on the lower Columbia River. We have had tremendous arguments over that as to its correctness. We in Idaho ask that it be unlimited. The downriver States argued at great length and said we could only have priority over those projects which were built up to 1975. We answered that that was silly, that in reclamation developments, 1975 is tomorrow. We live now in an era of surplus. We know it is going to disappear.

We came up with a formula providing that the upstream area, those portions of Oregon and Washington east of the Cascades where there is irrigation, and also all of the upstream States could have that priority until the year 2000, with the provision that if it was thereafter unanimously agreed by the permanent compact commission, that priority could be extended to the year 2050, but no longer.

That also has met with violent opposition of many people in Washington and Oregon. That is one of the reasons the compact was never ratified in those States. Perhaps Senator Jackson is right in stating, during the Senate hearings on the companion legislation, S. 1333, that it will never be ratified.

That question of the paramount rights of the Federal came into being. It is not new and it is not a mythical theory. I got into a lawsuit on it some 15 or 20 years ago, and the title of the case is *American Falls Reservoir District* v. *Crandall.*

The Government, through the Bureau of Reclamation, filed extensive briefs and argued orally for an entire day that when the Bureau of Reclamation came in on a stream and had built structures and taken it over, they had a paramount and superior right.

That case went off on a freak point which held that it could not be decided without the President of the United States as a party, and it was thrown out. To this day, the Bureau of Reclamation is doing that which we think is not legal: It is asserting a right in the American Falls Reservoir in Idaho contrary to State law.

To this day the Bureau of Reclamation with respect to certain waters of the American Falls Dam is dividing it in a way contrary to State law.

As indicated by the cost figures, I have heretofore stated that Brownlee Reservoir with its 1 million acre-feet of water is entirely economical from a construction and investment point of view.

The only real navigation benefit resulting from storage in Hells Canyon is in the section of the Snake River between Lewiston and Lime Point. The benefit here results from providing for a minimum flow and at other times regulating the flow to greater uniformity. Minimum flows will normally occur during period when storage is being refilled. Hence minimum navigation requirements will establish minimum releases from plants in the Hells Canyon reach during the refilling season.

The company's project is far superior because it provides for minimum releases of 5,000 cubic feet per second, the amount the Army Corps of Engineers found to be sufficient. On the other hand, power studies submitted by engineers proposing the single dam, use minimum flows of 2,000 cubic feet per second and lower. Such flows would not provide the desired navigation conditions in the Lime Point–Lewiston stretch of the river. Accordingly, at the only point where effects on navigation are significant, the single-dam plan is much inferior to the company's plan.

The requirement is not for storage to supplement the flows for navigation, but a limitation on the amount of water available for refilling so that the natural flow will not be reduced to the point that downstream navigation is seriously hampered, or even prevented.

As to navigation on reservoir pools, it requires quite a stretch of the imagination to conceive of transportation of commodities on a pool behind the single dam with its vertical fluctuation of 289 feet and its horizontal fluctuation of some 60 miles.

Two of the company's plants; namely, Hells Canyon and Oxbow will provide stable pools, and its Brownlee Pool will have a maximum drawdown of only 101 feet. On the other hand, the single dam would have a drawdown of 289 feet with its backwater rising aid receding over approximately 60 miles of mud flats.

There can be no escaping the conclusion that, from a recreational point of view, the 2 completely stable pools and the 1 pool with relatively minor fluctuations provided by the power company's plans, are superior. They will give better fishing opportunities since there will be 3 backwater areas instead of only 1, and access roads on both sides of the canyon, with frequent opportunities of crossing. They will render a much greater area accessible for hunting, picnicking, boating, and fishing. The stable pool levels will make possible the construction of summer homes, boat landings, and other such facilities. There will be less disturbance of wildlife and other such natural resources. The network of access roads will render a long stretch of the grandeur of this great gorge readily accessible to the public.

As to flood control, all of the 1 million acre-feet of storage provided by the company's plan would be effective for flood-control purposes for all three of the great floods of record. The single-dam plan would provide 3,880,000 acre-feet of usable storage. The Corps of Engineers' studies indicate that only 2,600,000 acre-feet of this (or 67 percent) would be useful in controlling the peak 1894 flood and smaller amounts in the other two floods.

The reason only part of the 3,880,000 acre-feet is usable for flood control is very simple. If 1894 streamflows occurred, the Columbia, the Salmon, and the Clearwater would be on a rampage. However, the Snake, at Oxbow would be running at only 55,000 cubic feet per second, less than half the actual flow in 1894. The reduction in the Snake's flow is the result of the millions of acre-feet of upstream storage that have been built on the upper Snake since 1894. Consequently, no matter how much storage space is provided in Hells Canyon, its effect on floods on the lower Columbia cannot exceed the total volume of water flowing past Oxbow over the critical 20- to 21-day period. This accounts for the fact that only 2,600,000 acre-feet of storage on the Snake above the Salmon River is needed to reduce the flow of the Snake, and the plant generation, to zero during the critical 20- or 21-day period.

Actually, as development of upstream irrigation reservoirs continue, the flow of the Snake at Oxbow under 1894 will be reduced even below 55,000 cubic feet per second with a consequent reduction of the amount of storage required to shut off completely the contribution of the Snake at Oxbow to floods on the lower Columbia. This point was brought out in the Army's flood-control studies of alternative main control plans included in the 1954 review report on the middle Snake.

From a flood-control viewpoint, any additional storage on the Snake, over and above the million at Brownlee, should be built on the upstream reaches of the Snake and tributaries. Flood-control storage is needed to prevent flood damages that occur every year on the upper Snake. Money spent for an acre-foot of upstream storage would perform a double function—eliminate or reduce local

flood damages and provide the same flood control for the lower Columbia as would be provided by an acre-foot in the Hells Canyon reach.

In short, we are faced here with a situation almost unique in the annals of water-resource developments. We have here a private company providing great flood control, navigation, and recreational benefits to the Nation, free of cost to the Nation, and without any request on the part of the company for contributions from the Federal Government. An unusual situation, you gentlemen and ladies will undoubtedly agree.

No engineer, whether he represent the Idaho Power, or advocates of public power, or the Federal Power Commission staff, has in anyway challenged the fact that the Idaho Power's project which I have described is economically feasible and will produce usable and salable energy at economic rates so that the same can be readily financed, and the cost thereof duly paid off in the usual and customary manner. That much goes without saying.

The Idaho Power Co. has filed this application for license to develop the Hells Canyon reach of the Snake because the increasing needs of its customers necessitates prompt completion of a large block of generating capacity. Under the circumstances the opposition of Idaho Power to the enactment of the pending legislation is a foregone conclusion.

Obviously, my client, a private enterprise, willing, able, and eager to continue to fulfill its responsibility of adequately serving the power needs of its area, is opposed to the concept of public power as preached by many, if not all, of the proponents of the single Federal dam.

However, I do not intend to enter into the ideological argument here. The issue is not confined to the matter of private versus public power, important as that issue may be. There is also the matter of the comparative engineering and economic merits of the three-dam and single-dam plans for the development of the Hells Canyon reach of the Snake River. This matter has nothing whatsoever to do with public versus private power. It is a problem largely in system planning for the expansion of regional power facilities which, although they are owned by many interests, are all operated on a coordinated regionwide basis. Since both alternative plans of development are multiple-purpose projects, consideration must also be given to respective nonpower benefits.

I propose to discuss the respective economic merits of the three-dam and single-dam plans on the basis of power and nonpower benefits, entirely apart from the matter of public versus private power.

The bills before you propose, by reference to a very sketchy, and, I believe, outmoded 4-year-old report, a single-dam plan for the development of the Hells Canyon reach of the Snake River. The maximum power head (602 feet) is identical with that for Idaho Power's three-dam plan. The initial power installation of 800,000 kilowatts is substantially identical with the initial installations for the 3-dam plan; but its ultimate total installation—900,000 kilowatts, is substantially less than the ultimate installation proposed under the company's 3-dam plan, 1,175,000 kilowatts.

The only real difference between the 2 projects is that it is proposed, at an additional cost of a quarter of a billion dollars, to provide 2.8 million acre-feet of additional storage space—and I use the word "space" intentionally, for, since it will not always fill, it will be "space" and not be "water."

Therefore, the real question in this hearing is: Would the additional 2,880,000 acre-feet of storage provided by the single-dam plan result in benefits that are adequate to justify the expenditure of over $250 million?

There have been numerous efforts, both overt and covert, to claim that the single-dam plan represents comprehensive development, whereas the three-dam plan does not represent comprehensive development. In view of the way the term "comprehensive development" has been bounded about, I believe it is necessary to indicate my understanding of the term "comprehensive development." Our understand is that comprehensive development represents the development that will develop the potentialities of a particular site to the maximum extent that is both physically and economically feasible.

Economic considerations must have entered into the planning of the single-dam developments—considered comprehensive development by its proponents—otherwise it is difficult to understand why the single dam was not made higher.

After all, there is no question that physically an even higher dam could be constructed in Hells Canyon.

It would not seem that a brief hearing such as here scheduled, before laymen unversed in the intricate technicalities of power system planning, with all of its vast field of technical terms and with a great quantity of necessary assumptions, variables, and so forth, could result in any comparative evaluation of these projects which would be of any substantial value in answering this question. If no other evidence of this fact were required, one need only review the approximately 20,000 pages of evidence and more than 450 exhibits, many of them of themselves being many pages, which constitute the record before the Federal Power Commission hearing which ran more than 1 year. On both sides, and on the part of the independent staff of the Commission itself, some of the most competent engineers in the country have given their opinions, accompanied by lengthy documentation, each assuming certain variables and making certain assumptions, each individual arriving in a final analysis at somewhat different conclusions.

It should be noted that no new or different evidence has been brought out here than was presented at the FPC hearings; all that has been done is to select a handful of the witnesses and then present a part of their general testimony without including in this record their cross-examination on these subjects. Here there was no cross-examination of these witnesses by trained experts. In addition, numerous nonprofessional witnesses have here presented their understanding of the significance of highly technical testimony presented on both direct and cross-examination by qualified experts before the Federal Power Commission.

We fail to see where any good purpose could be served if we attempt to retry that lengthy hearing here, or burden this record with the vast amount of engineering and documentary evidence which could very easily be produced by us. Believing that this Republic is a Government of law, and knowing that the law has created the Federal Power Commission as the tribunal before which such technical controversies should be heard, and having full confidence that this independent tribunal, created by Congress and entrusted by the Congress with specific duties, will come up with a fair, unbiased, and impartial answer, we propose to leave that task to that tribunal.

Suffice it to say that the Idaho Power Co. there presented detailed and documented evidence showing the production capability of its proposed plants, measured by the yardstick commonly used throughout the United States for measuring the potential contribution of a proposed new plant to a given electrical system, over the years of its expected service life to that system. Idaho Power did not attempt to justify its project of three plants, solely on the contribution of those plants to its own system, but accepted the challenge of showing the contribution to the Northwest Power pool as a whole.

In an oversimplification, we would like to point out that the thing which an electrical producer sells to the customer is energy, i. e., that which is measured in kilowatt-hours. It makes no difference how great the capacity of the hydroelectric machinery that may be installed and sitting in a powerplant. That neither gives any precise measure of the amount of electrical energy that will be received during any such time period. The precise total on these points is the number of kilowatt-hours of energy that will be made when they are required and at the time when the customers need them and which will be paid for in cold cash. And that applies to Federal Government dams as well as to projects licensed by the Federal Government for private development.

Neither does the installed hydroelectric capacity indicate the measure of the dependable capacity or capacity value of any given powerplant. For the only capacity which is of value to the power consumer, or for which revenue can be obtained, is that capacity which is and will be dependable (i. e., available) at the times when it is needed, and in the amounts required. Technically, this is referred to as "dependable on the load shape" and, oversimplified in ordinary language, this means available at the time when the customer will want it and will buy it.

In order to meet the needs of its customers, any electric system must provide installations that are large enough to meet the maximum combined instantaneous demand of all of its customers, and power resources that can generate sufficient energy to meet the average demands of their customers. In other

words, the system must provide both kilowatts and kilowatt-hours, or, as the engineers term it, peaking capacity and energy. Consequently, in comparing the 2 hydroelectric developments such as the single-dam plan and the 3-dam plan, consideration must be given to their respective contributions in both kilowatts of peaking capacity and kilowatt-hours of energy.

How do the single-dam and three-dam plans of development compare with respect to peaking capacity?

With full reservoirs, the single-dam plan provides 800,000 kilowatts of peaking capacity and the 3-dam plan provides 900,900 kilowatts. However, as storage is drafted the reservoir level falls, with a consequent reduction in the head on the generating units and a consequent reduction in the peaking capacity that can be provided by the machinery installed.

As mentioned earlier, both plans of development develop all of the fall in the river between Hells Canyon and Weiser. Consequently, with full reservoir, both plans will develop 602 feet of head. The 1 million acre-feet of usable storage provided by the 3-dam plan results in a maximum reduction of 101 feet in the head that is developed by the machinery. The single-dam plan of development, with its 3,880,000 acre-feet of usable storage, requires a drawdown of 289 feet. Consequently, at minimum reservoir levels, the single-dam plan would develop only 313 feet of head, or approximately 50 percent of the head available in the Hells Canyon reach. On the other hand, the 3-dam plan of development would develop 501 feet of head even with minimum reservoir levels. As a result, the capacity of the single-dam plan of development would be only 392,000 kilowatts at minimum reservoir levels, whereas the 3-dam plan of development would still be capable of generating 709,000 kilowatts at minimum reservoir levels. It is quite apparent, then, that over the proposed range of storage operations the 3-dam plan would provide capacity substantially in excess of that which could be provided by the single dam. Hence, insofar as peaking capacity is concerned, the 3-dam plan of development is superior to the single-dam plan of development.

How do the two plans of development then compare with respect to the energy that can be generated?

With the 3-dam plan of development, generation at the 3 plants in the Hells Canyon reach would average 4.9 billion kilowatt-hours per year, whereas generation at the single dam in the Hells Canyon reach would average 4.7 billion kilowatt-hours per year.

However, at the present time there is in existence, or under construction, three plants on the lower Columbia River whose generation would be affected by storage operations in the Hells Canyon reach. Normally, storage in the Hells Canyon reach will be drafted during months in which the flow available at the lower Columbia plants is less than the water capacity of the installations. Subsequent refilling of storage in the Hells Canyon reach will normally occur during months when natural flows at the lower Columbia plants are greater than the flow usable at these plants. As a result, the million acre-feet of storage provided under the 3-dam plan would increase the generation at the lower Columbia plants by an average of 190 million kilowatt-hours per year, whereas the 3,380,000 acre-feet of storage provided by the single-dam plan would increase such downstream generation by 490 million kilowatt-hours per year. The total generation attributable to storage developments in the Hells Canyon reach would be: single-dam plan 5.2 billion, 3-dam plan 5.1 billion kilowatt-hours per year. In other words, the single-dam plan would provide only 100 million kilowatt-hours per year, or about 2 percent more energy than the 3-dam plan.

There has been a lot of talk about the greater power values created by the single-dam plan if it were added to a system that included five nonexistent, but authorized, downstream plants in addition to those currently in operation or under construction.

What effect would the existence of these lower Snake plants and John Day have on the power benefits created by the single-dam and 3-dam plans?

The existence of additional downstream plants has no effect on the capacity provided at plants on the Hells Canyon reach.

Additional downstream plants would not change the average energy that could be generated at plants in the Hells Canyon reach. However, there would be some increased downstream generation resulting from storage in the Hells

Canyon reach. Under these conditions, the average generation created by developments in the Hells Canyon reach would be:

Single-dam plan: 4.7 billion kilowatt-hours in Hells Canyon and 1.5 billion kilowatt-hours at downstream plants, or a total of 6.2 billion kilowatt-hours per year.

Three-dam plan: 4.9 billion kilowatt-hours in Hells Canyon and 600 million kilowatt-hours at downstream plants, or a total of 5.5 billion kilowatt-hours per year.

Therefore, even if 8 downstream plants were in existence instead of 3, the single-dam plan would provide only an average of 700 million kilowatt-hours (about 11 percent) a year more than the 3-dam plan.

As previously noted, the essential difference between the single-dam plan and the 3-dam plan lies in the additional 2,880,000 acre-feet of storage provided by the single-dam plan. This difference of 2,880,000 acre-feet in the 2 plans of development produces the following effects:

1. The single-dam plan would cost approximately $250 million more than the 3-dam plan.

2. Regional nonpower benefits would be somewhat greater for the single-dam plan. The Corps of Engineers' estimates of nonpower benefits would be about $1,350,000 per year greater for the single-dam plan than for the 3-dam plan.

3. The single dam will develop between 313 feet and 602 feet of head depending on the amount of water to storage. The 3-dam plan will develop between 501 and 602 feet of head, depending on the amount of water in storage.

4. As storage is used capacity provided by the 3-dam plan will only drop slightly from 783,000 kilowatts to 709,000 kilowatts, a reduction of about 10 percent, or an average of 746,000 kilowatts, whereas the capacity provided by the single dam will drop from 800,000 kilowatts to 392,000 kilowatts, a loss of over 50 percent, and an average of 596,000 kilowatts.

5. The average energy generated by plants in the Hells Canyon reach will be greater for the three-dam plan than for the single-dam plan.

6. The increased generation at downstream plants attributable to storage in the Hells Canyon reach will be somewhat greater for the single-dam plan than for the three-dam plan.

7. Even assuming that five downstream sites for which no construction funds have been appropriated were actually in operation, the average annual generation at site and downstream attributable to the single-dam plan is only 700 million kilowatt-hours per year greater than the corresponding average annual generation attributable to the 3-dam plan.

What are the respective annual values that correspond to these differences in capacity and average energy?

The staff of the Federal Power Commission has made numerous studies as to the long range value of energy in the Pacific Northwest. These indicate a value from approximately 3.1 mills per kilowatt-hour in 1954 to 3.74 mills per kilowatt-hour in the year 2034, or an average of 3.4 mills per kilowatt-hour.

Hence, the 700 million kilowatt-hours of additional energy attributable to a single-dam plan as compared with the 3-dam plan represents an annual value of about $2,400,000 per year.

The Federal Power Commission has estimated that capacity will be worth $16.50 per kilowatt in the Pacific Northwest during the period from 1955 to 2034. The greater average peaking capacity provided by the 3-dam plan would be worth about $2,475,000 per year.

In other words, the greater capacity value provided by the 3-dam plan is slightly greater than the greater energy value attributable to the single-dam plan.

For all practical purposes, then, the only difference between the annual benefits respectively provided by the single-dam and 3-dam plan is given by the difference in respective nonpower benefits of $1,350,000, and these are temporary in character. As I previously mentioned, substantially all of the flood control portions of these benefits will disappear when necessary upstream flood control comes into existence.

In other words, the single-dam plan would cost approximately $250 million more than the 3-dam plan and provide temporary, and somewhat questionable annual benefits about $1,350,000 greater than those of the 3-dam plan. These temporary greater annual benefits are only one-half of 1 percent of the greater investment.

Even with tax-free 2¼-percent Government money, such greater investment would not be economically justifiable.

Even with tax-free 2½-percent money from the Federal Treasury, investing a quarter of a billion dollars in facilities whose reimbursable and nonreimbursable annual benefits will gross only ½ to 1 percent is not economicallly justifiable whether the amortization period be taken as 50 years or a thousand years.

Based on accepted engineering criteria as to the economic size of a facility, whether it be the size of the entire project or the size of a major component of a project, the single-dam plan is not economically feasible. The application of these accepted criteria are to be found in numerous professional engineering articles. They are exhaustively discussed on pages 11–13 of the May 1950 report of the Subcommittee on Benefits and Costs, to the Federal Interagency Power Basin Committee entitled "Prospective Practices for Economic Analysis of River Basin Projects," often referred to as the "Green Book."

The tax payments that can be anticipated, both to Federal and local governments, from the company's proposed development, are also impressive. Based upon present tax rates and valuations, as it was brought out in the recent hearings before the Federal Power Commission, it is estimated that the company would be required to pay over $9¾ million annually—almost $10 million every year—in Federal, State, and local taxes. This huge sum would be divided approximately $6 million each year to the Federal Government, approximately $4 million in State and local taxes.

In Washington County, Idaho, alone the property tax on the three dams would be nearly double the total taxes collected in the entire county today, and almost a million dollars a year of new tax dollars would be provided for county, schools, highways, and other local needs. In Adams County, Idaho, the property tax bill would be over a half a million dollars a year, approximately twice the amount of the total taxes paid in the entire county today.

Across the river, in Oregon, an estimated half a million dollars a year in property taxes alone would flow to Baker County, and some $200,000 a year to both Malhuer and Wallowa Counties.

In summary, over an assumed 50-year license or payout period, the company's three projects would bring in to the Federal Government an aggregate total of $300 million, with another $200 million which would be paid in taxes to States and local taxing units.

Thus, over a 50-year period, the company's 3-dam program of development will pay taxes far in excess of its entire capital costs, both to the Federal Government, and again to the States and other local taxing subdivisions.

At this hearing, Mr. Riter, of the Bureau of Reclamation, has given comparative costs of power based on his so-called comparable basis. In this so-called comparison he used for the 3 dams a capital-cost figure of $285,700,000, allocated to power. Questions were asked of him as to what cost of power would be obtained by following his method but using as capital cost the sum of $133 million as estimated by the company and Morrison-Knudsen. This shows a cost of 1.89 mills per kilowatt-hour for the 3-dam project instead of 3.99 mills per kilowatt-hour as obtained by Mr. Riter. This computation is shown on the following table.

Comparison of power costs of 3-dam plan using different construction cost estimates

	Riter FPC exhibit 186A, p. 28 (a)	Idaho Power Co. construction estimate
Capital investment including interest during construction	$307,100,000	$133,000,000
Capitalized nonreimbursable benefits	19,500,000	19,500,000
Power allocation	287,600,000	113,500,000
Annual cost:		
Amortization and interest, 3.526 percent of power allocation	10,141,000	4,002,000
Operation and maintenance	2,326,000	2,326,000
Downstream units cost	571,000	571,000
Total	13,038,000	6,899,000
Kilowatt prime power	610,000	610,000
Annual cost per kilowatt-year	$21.37	$10.13
At market cost per kilowatt-hour, mills	3.99	1.89

There has been a great deal of talk about the necessity of Hells Canyon power for the production of phosphate fertilizer from the phosphate rock in southeastern Idaho about 400 transmission line miles from Hells Canyon. As you have been shown, Hells Canyon power by itself is not cheap power and in addition to the generating plant costs, BPA witnesses at the FPC hearing showed the cost of transmission facilities to the phosphate beds would be over $33 million. This will further increase the cost of power. As you will see from this map the airline distance between Hells Canyon and southeastern Idaho is a little more than the airline distance from Washington, D. C., to Buffalo, N. Y. Any statement that the Hells Canyon project is "near" the phosphate beds of southeastern Idaho is just as logical as a claim that Niagara is "near" enough to the Nation's Capital as to furnish cheap power there.

I have mentioned before the heavy power requirements in the Northwest power pool are in the winter, and if Hells Canyon storage is to be used to increase downstream generation, the storage will be used along with the natural streamflow during the period August 15 to about April 15. Consequently the only time that water may be stored is that available in the period from approximately April 15 to August 15.

Throughout this hearing engineers for both sides have agreed that this is the only time water is available for storage in any project in the Hells Canyon reach of the river. The test of a storage dam is the amount of water available in past historical short water years. On the Snake River the years 1929–37 present a typical dry cycle. Attached as chart I is a diagram showing in the solid black area the time and amount of water that may be stored in the period from 1929–37, assuming irrigation upstream at only 367,000 acres over the 1948 average, which we estimate will occur by 1962. The tabulation shows the water available for storage in the 20-year period from 1929 to 1948 for 3 different levels of irrigation development.

It will be noted that during this entire period there was not available enough water to come within a million acre-feet of filling—and that in many years the supply was very short.

Another method of portraying the water shortages that would prevail with respect to the dam with storage capacity of 3,800,000 acre-feet is to take the storable flows available during the period 1929–48. Attached table A shows the storable flows for this period. The large dam could have been filled only four times in this period, which is agreed to be typical of the streamflow.

As a result of operating the high dam for power production in conformance with the present power requirements, there will be wide variations between the at-site generation in the storage release and storage refill seasons. Chart II attached shows the monthly variations and also the times when and the amount of power that will need to be transmitted into Idaho to supply the 500,000 kilowatts of prime power allocated to Idaho by the pending legislation. The Hells Canyon deficiency in the storage period will need to be supplied from the

lower Columbia River plants and as noted Mr. Houston, surplus from the lower Columbia River plants will be available only a few years (probably 3) after the high dam might be completed. A comparison of chart I with chart II shows the effect of storage on the at-site power production.

In connection with the proposed method of operation planned for the single dam, that is for the transmission of large amounts of power westward to the Bonneville system during 8 months of the year, and then the transmission of some 420,000 kilowatts or more back to Idaho during 4 months of the year there would, of necessity, be required a tremendous new addition to the Federal transmission system. Transmission of this large block of power would be a major undertaking. It has been suggested by certain Federal engineers, as we understand it, that this would take either two 230,000-volt lines or one 345,000-volt line. The latter plan has been criticized because reliance on the single line would throw the entire system out of commission in the event of any accident thereto. In any event it will create an additional project of considerable magnitude.

In conclusion I submit that, as stated earlier, the only difference between these two projects is the additional 2,880,000 acre-feet of storage capacity in the single dam project. It seems clear that if this additional storage is desired, the proper place to provide it is in upstream storage either on the upper Snake River or its tributaries. Expenditure of Federal funds to create this cyclical storage at any other place in the Snake River Basin seems completely unjustified and from the power production angle it is certainly clear that the additional power provided by this additional storage, even if we include both at-site generation and the additional generation at all planned eight downstream sites, will cost more than its value. And additionally, it is very evident that the same incremental power could be furnished at modern steam plants located adjacent to the load centers at Portland and Seattle for about from one-third to one-fifth of the difference in cost between the company's 3-dam project and the single dam.

And finally, that this pending legislation presents no realistic relief for the power consumers of southern Idaho. An actual power shortage is now there existent. It will inevitably increase from year to year. If this legislation passes, the consumers in the Idaho Power Co.'s area are going to be either condemned to a life of deficiency or the company will have to begin the immediate construction of high-cost steam plants. We will then have the anomaly of steam plants grinding out kilowatts while being located on the banks of the Snake River itself, while the waters of that great stream, with their potential hydroelectric development characteristics, flow unused to the sea.

TABLE A.—*Estimated water available for storage, Apr. 15 to Aug. 15, Snake River at Oxbow*

	1962	1977	2008
Streamflow: Irrigation developed from 1948 (acres)	367,000	725,000	1,196,000
Minimum release during storage period (cubic feet per second)	5,000	5,000	2,000
Year:	*Acre-feet*	*Acre-feet*	*Acre-feet*
1929	1,964,000	1,005,000	971,000
1930	1,576,000	796,000	674,000
1931	1,140,000	810,000	397,000
1932	2,344,000	1,687,000	1,411,000
1933	2,538,000	1,882,000	1,677,000
1934	1,143,000	646,000	507,000
1935	1,464,000	1,136,000	673,000
1936	2,791,000	1,927,000	1,848,000
1937	1,590,000	1,017,000	768,000
1938	4,464,000	3,314,000	3,393,000
1939	1,872,000	810,000	1,045,000
1940	2,247,000	1,262,000	1,481,000
1941	2,285,000	1,401,000	1,416,000
1942	3,362,000	2,386,000	2,354,000
1943	6,062,000	4,846,000	5,083,000
1944	2,465,000	1,501,000	1,493,000
1945	2,920,000	2,082,000	2,018,000
1946	4,064,000	2,753,000	3,175,000
1947	2,900,000	1,710,000	2,004,000
1948	3,839,000	3,111,000	2,912,000
Median year	2,404,000	1,594,000	1,487,000

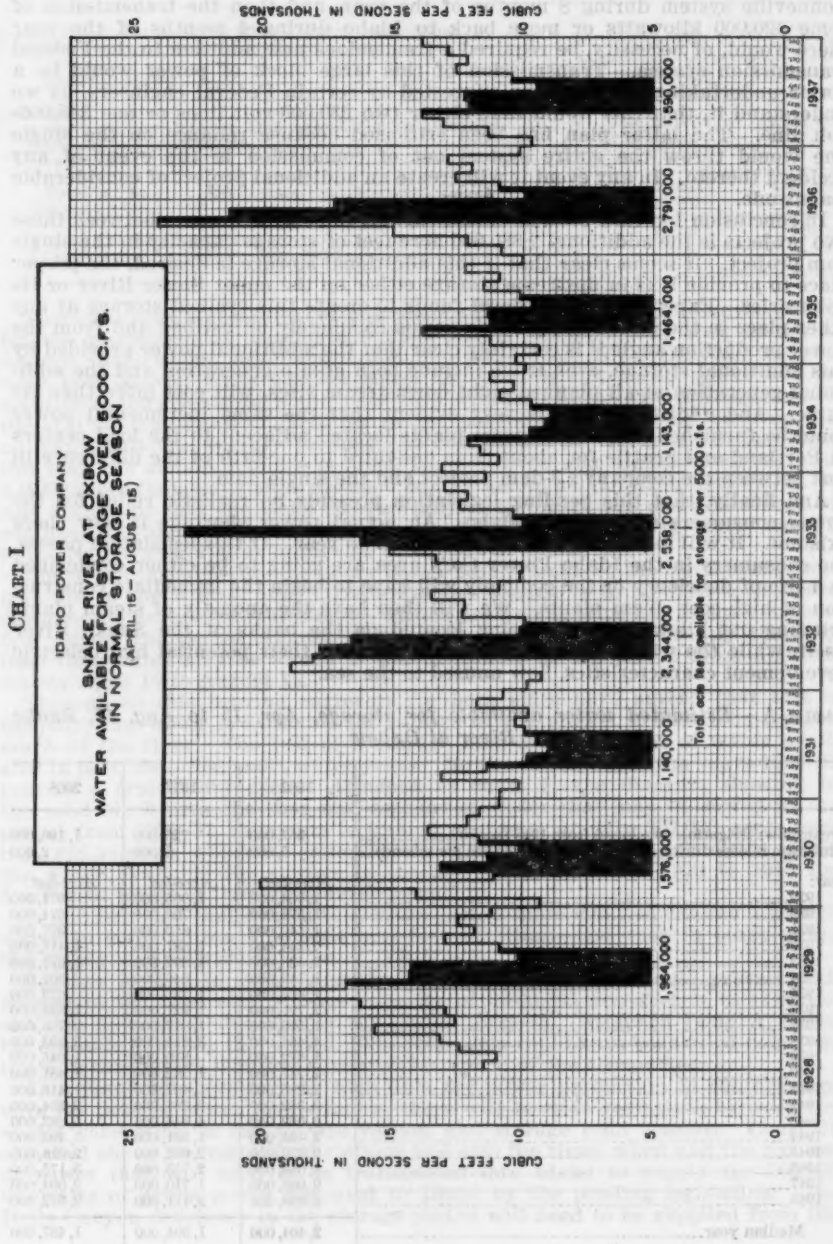
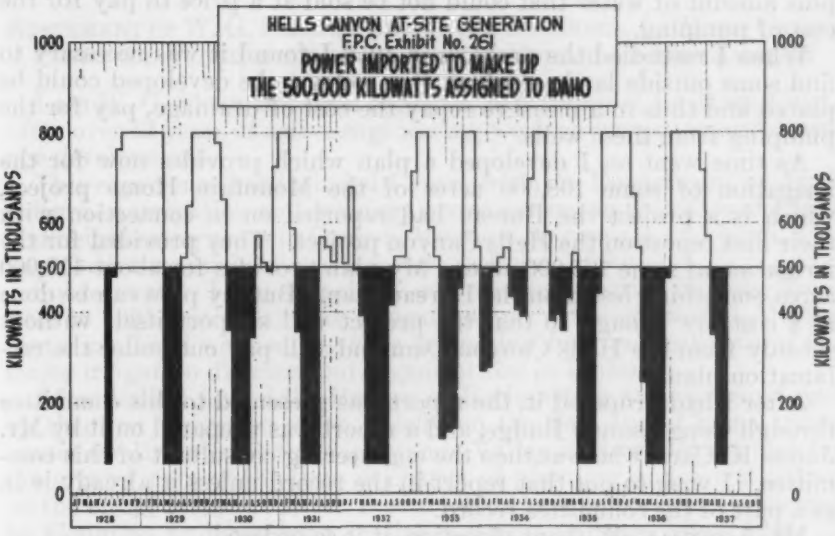


CHART I
IDAHO POWER COMPANY
SNAKE RIVER AT OXBOW
WATER AVAILABLE FOR STORAGE OVER 5000 C.F.S.
IN NORMAL STORAGE SEASON
(APRIL 15 – AUGUST 15)
CUBIC FEET PER SECOND IN THOUSANDS
25
20
15
10
5
0
1,984,000
1,576,000
1,140,000
2,344,000
2,538,000
1,143,000
1,464,000
2,791,000
1,590,000
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
Total acre feet available for storage over 5000 c.f.s.

CHART II



Mr. ASPINALL. The Chair now calls to the stand Mr. Sloan, former Commissioner of the Bureau of Reclamation.

Mr. Sloan, it is always a pleasure to have before this committee somebody that has given service such as you have given to Reclamation in years past. You have very nearly 5 minutes.

STATEMENT OF W. G. SLOAN, CONSULTING ENGINEER, LA MESA, CALIF.

Mr. SLOAN. Thank you. I will try to make it in 5 minutes.

I am W. G. Sloan, a retired engineer, now living at La Mesa, Calif., after over 42 years of active engineering work on irrigation and drainage development.

About 25 years of that time, or 20 years, was spent in private practice of irrigation engineering at Boise, Idaho, and the remainder of the time I was with the Bureau of Reclamation. During my period with the Bureau of Reclamation I made all the investigations on the so-called San Juan-Chama diversion into the Rio Grande in New Mexico and Texas, and also spent altogether about 13 years on investigations in the Missouri River Basin. Out of my work there came the comprehensive report on the Missouri River, which was approved by Congress and has been under construction since 1946.

During my time as a private engineer I had developed a good many drainage wells in the Boise River, and it was because of my experience in that pioneer work on drainage that after I had retired the Idaho Power Co. asked me to come back to Boise to help solve these terrific drainage problems in the Boise Valley which had been continuing from the previous 25 years.

I had worked out a system of providing for this drainage by pumping from the underground water. While the wells themselves were successful, it could not be continued because there was no market for

the water which was thus developed. In other words, it was a surplus amount of water that could not be sold at a price to pay for the cost of pumping.

When I restudied the problem in 1952 I found it was necessary to find some outside land on which this water to be developed could be placed and thus in a measure repay the cost of drainage, pay for the pumping from these wells.

As time went on I developed a plan which provides now for the irrigation of some 108,000 acres of the Mountain Home project, which is a project the Bureau had reported on in connection with their first report on the Hells Canyon project. They provided for the irrigation of some 195,000 acres. My plan provides for about 110,000 acres, something less than the Bureau plan. But my plan can be done at a cost low enough so that the project will support itself without subsidy from the Hells Canyon Dam and will pay out under the reclamation plan.

After I had proposed it, the report was presented to this committee through Congressman Budge, and a report was prepared on it by Mr. James K. Carr, who was then the engineering consultant of this committee. I wish to put that report in the record unless it already is in as a part of the committee record.

Mr. ASPINALL. Without objection, it is so ordered.

Mr. SLOAN. After we had received Mr. Carr's report, we came to Washington and persuaded the Bureau of Reclamation to investigate this alternate plan themselves, and they have spent about 2 years making that study and have come out with a report practically confirming my original idea. And that report I wish to present for the record. It was dated November of 1954, a special report on the alternate plans upon Mountain Home irrigation and drainage project.

Mr. ASPINALL. Would you just as soon it be made a part of the file?

Mr. SLOAN. That is right.

Mr. ASPINALL. And the report you referred to before?

Mr. SLOAN. As part of the file.

Mr. ASPINALL. Unless there is objection, the reports will be made a part of the file.

Hearing none, it is so ordered.

(The reports referred to will be found in the file of the committee.)

Mr. SLOAN. The original Bureau's plan would have cost them $253 million. This plan of mine costs about $75 million.

The original plan called for a subsidy from Hells Canyon Dam of some $170 million. This calls for no subsidy whatever.

I think it is a workable plan and is merely offered to show that this vast area in the Mountain Home area can be irrigated without any reference whatever to the Hells Canyon Dam.

Mr. ASPINALL. That you very much.

Unless there is objection, the statement of Mr. Sloan handed to the committee will be made a part of the record as if read.

Hearing no objection, it is so ordered.

(The statement referred to follows:)

STATEMENT OF W. G. SLOAN, CONSULTING ENGINEER, LA MESA, CALIF.; FORMERLY WITH THE UNITED STATES BUREAU OF RECLAMATION

I am W. G. Sloan, a retired engineer, now living at La Mesa, Calif., after over 42 years of active engineering work on irrigation and drainage development.

This experience has included 7 years with the Department of Agriculture on irrigation and drainage investigations in the State of Idaho and neighboring areas in Oregon, Montana, Wyoming, and Utah, during which time my headquarters were in Boise, Idaho.

Subsequently, I was in private engineering practice in Boise from 1919 to 1935, specializing in irrigation and drainage work. During that time, I did work at one time or another for practically all of the major irrigation districts and organizations in Idaho.

After 1935, I joined the Bureau of Reclamation and was employed by them on irrigation work, chiefly on the San Juan-Chama transmountain diversion to the Rio Grande Valley in New Mexico, and for the greater part of the time in charge of planning and investigation on the entire Missouri River Basin. This latter plan was authorized by Congress and has been in the construction stage since 1946. I retired from the Bureau of Reclamation on January 1, 1951.

Since then I have been living in La Mesa, Calif., and have occasionally accepted assignments in a consulting capacity for the State of North Dakota, the State of Wyoming, the San Diego County Water Authority, the La Mesa Irrigation District, and the Idaho Power Co.

During the period 1924 to 1930, while I was in private practice, I pioneered the development of underground water in parts of the Boise Valley, both for drainage and irrigation purposes. I was instrumental in the construction of some 40 irrigation and drainage wells in the valley during that period, and advocated the development of the underground water in the valley on a large scale to serve the dual purpose of drainage and irrigation.

Shortly after I had retired, the Idaho Power Co. requested me to return to Idaho for a short time to make a brief study and recommendation for alleviation of the increasing drainage problem which was threatening the stability and continued production in many parts of the Boise Valley where continued high production was essential to their own market for power.

Ever since 1915, the Boise Valley has been fighting continuously against an overloaded underground water condition. More than 250 miles of open drain ditches were constructed in the earlier years, and this mileage of drains has been steadily increased to over 300 miles at present. But these drains are shallow and inadequate to cope with the increasing amount of water contributed to the underground strata by the profligate use of water on the surface. Earlier, piecemeal attempts to solve the problem by pumping from wells were eminently successful, but the cost of pumping was a deterrent to its universal use.

Before the Anderson Ranch Reservoir was built, recurrent shortages of irrigation supplies offered a market for the water which could be obtained from wells, thus offsetting the cost of pumping by the sale of the water produced. But as surface water supplies were augmented by storage, the value of water became cheaper and it became evident that this abundant source of ground water could not be utilized in competition with cheaper stored water. This combination of circumstances had intensified the need for a new approach to the overall drainage problem.

As I began a reappraisal of this drainage problem in 1952, many years after my earlier intimate association in various parts of the valley, I realized that the drainage problem had indeed become of serious proportions. In almost every portion of the valley, I found areas of from several hundred to several thousand acres aggregating in total well over 50,000 acres where the water table was within from 2 to 4 feet from the surface throughout the irrigation season. Many acres had gone completely out of production and there was universal recognition throughout the valley that something had to be done as quickly as possible to alleviate the situation.

It was apparent that continuation of the open-ditch program would not offer a lasting solution. Increased land values made the economic loss resulting from the destruction of 7 acres of land by every mile of open ditch a serious objection. This factor, together with the obvious inadequacy of the open-drain system, precluded further consideration of that method.

I therefore began a search for fringe areas of new lands which could be brought into cultivation and thus bring about a demand for the abundant ground-water supplies which could be obtained at relatively low cost. It was apparent that the job could not be done piecemeal. The drainage problem encompassed the entire valley, and the market for the excess water must therefore be of considerable magnitude.

It gradually became apparent that the surest and most economical plan to solve the drainage problem and provide for the development of new land lay in the Mountain Home and Hillcrest units of a project for which the Bureau of Reclamation had already made plans to import the necessary water supply from the Payette River watershed at an enormous cost per acre.

The original Bureau plan as given in House Document 473 (81st Cong., 2d sess.) provided for the irrigation of some 192,000 acres of land on what is now generally known as the Mountain Home project. The water supply for this project was to be taken from the Payette River by diversion first from the North Fork of the Payette to the South Fork through the Scriver Creek power system, thence by long tunnel into the Boise River watershed, where the diverted water would be introduced into the Boise River flows at Lucky Peak Reservoir, which is immediately below Arrow Rock Reservoir. From Lucky Peak Reservoir the water would be again diverted to what is known as the Hillcrest portion of the Mountain Home project, covering approximately 90,000 acres of land. The remaining portion of Mountain Home unit of the project was to be irrigated by diverting water from a point a few miles below the Anderson Ranch Dam on the South Fork of the Boise through an 8-mile tunnel to Long Tom Creek and thence to some 105,000 acres in the vicinity of Mountain Home.

The diversion from the Payette River would be sufficient to substitute in the Boise River as much water as would be taken out from the Boise River at the two diversion points to cover the entire project. The total cost of this proposed project by the Bureau of Reclamation was $253,234,000, of which amount $170 million would have to be covered by a subsidy from the power revenues from Hells Canyon Dam, the remaining portion to be repaid by the landowners on the project.

As a result of my study a report was issued which outlined what has come to be known as the alternate plan for the development of a major portion of the Mountain Home area and including an adequate, complete drainage system for the entire Boise Valley. That report is printed in full in a document of the Committee on Interior and Insular Affairs, House of Representatives, 83d Congress, and known as Committee Print No. 4. This document also contains a review of the alternate plan by James K. Carr, who was the engineering consultant to the committee at that time. I would like at this time to submit for the record a copy of the report.

Within the limited time and resources available to me at the time, the report outlines the possibilities in the area and discusses the probable cost and methods by which the plan could be accomplished.

After consultation with local officials of the Bureau of Reclamation, the State reclamation engineer for Idaho, and representatives of the various irrigation and drainage districts in the Boise Valley, it was decided to request an investigation by the Bureau of Reclamation of the proposal and a report on the alternate plan.

Subsequent conferences in Washington resulted in the allocation of funds for the investigation. After 2 years of study of the plan, the Bureau issued their report dated November 1954. Copies of this report were made available to the Senate subcommittee by Mr. White of the Bureau of Reclamation at the hearings in May on S. 1333. I would like to submit a copy for the record at this time.

The report definitely establishes that the alternate plan is economically feasible; that the project can stand on its own merits, and requires no contribution from sources other than those inherent in the plan itself, and can be accomplished without importation of additional water from the Payette River watershed.

The plan requires a total capital investment of less than one-third of that required for the original plan proposed by the Bureau of Reclamation, and the cost per acre is less than one-half that of the original plan. As a whole, the plan as now reported is for a project which can pay for itself within the customary time under reclamation law with no outside subsidy.

The alternate plan provides adequate drainage for the entire Boise Valley by means of 515 wells which will be equipped to extract the underground water and deliver it for use on adjoining lands. This water supply, which will average 225,000 acre-feet per year, will be exchanged for an equivalent amount of the flow in the Boise River.

Near the lower edge of the Boise project a pumping plant is proposed for installation in Snake River, an entirely different stream from the Boise, to pump Snake River water into Deer Flat Reservoir, thus replacing an average of 150,000 acre-feet per year which are now being diverted into Deer Flat Reservoir from the Boise River.

The average annual surplus of water now unused in the Boise River is 225,000 acre-feet per year. Thus in addition to accomplishing the complete drainage of the Boise Valley an additional supply of water averaging 600,000 acre-feet per year can be made available for the irrigation of new lands. This total of 600,000 acre-feet is made up as follows: 225,000 from surpluses unused in the Boise River, 225,000 by pumping from ground water, and 150,000 by pumping from Snake River into the Boise River water supply. The lands to be irrigated are in the same 2 divisions as have been designated in the Bureau project; namely 103,500 acres in the vicinity of Mountain Home but only 5,000 acres in the Hillcrest division. In addition a supplementary water supply will be furnished to 5,000 acres of land in the vicinity of Mountain Home, now with an inadequate water supply.

Powerplants of 30,000 kilowatt capacity each will be installed in the irrigation system for the Mountain Home area and at the outlets of the Lucky Peak Dam on the Boise River. These 2 powerplants will furnish all of the future pumping facilities required in the plan and permit the commercial sale of additional quantities of power which the Bureau estimates would return $260,000 annually toward repayment on the cost of the project.

The total cost of the alternate plan has been estimated by the Bureau of Reclamation in their recent report on the project to be $76,829,000. In summary, the alternate plan provides the following advantages:

1. An economical solution to the Boise River drainage problem.
2. Use of Boise River drainage water instead of transfer of Payette River water to the Boise Valley.
3. Construction time would be reduced from 30 years to less than 10 years.
4. The entire cost would be repaid within a reasonable repayment period.
5. No duplicates of facilities that would prevent additional development of the remaining suitable land in the Mountain Home area when water can be made available from other sources.

The problem of substituting drainage water produced by pumping from the underground water basin in the Boise Valley for surplus diversions of water from the Boise River is not new to the Boise Valley. Back in 1916, 3 irrigation districts in the valley; namely Nampa-Meridian Irrigation District of about 55,000 acres, Pioneer Irrigation District of 34,000 acres, and the Settler Irrigation District of 23,000 acres entered into contracts with the Bureau of Reclamation to purchase water in Arrow Rock Reservoir and at the same time pay for construction of a drainage system in those areas. In that contract these districts agreed that in lieu of Arrow Rock storage water the Government could deliver to them water developed by the drainage system.

Those contracts have been carried out and that exchange has been made annually ever since 1916. The precedent was long ago established and all of these districts have been living under those contracts without complaint. This principle of exchange is proposed to be used in developing this water supply for the Mountain Home project.

A comparison of the estimated cost of the original Bureau plan as given in House Document 473, 81st Congress, 2d session, and the

alternative plan as given in the special report of the Bureau dated November 1954, is given in the following tabulation:

Bureau estimate for the original plan as of March 1950

Mountain Home allocation of cost of Cascade Reservoir	$5,912,000
Smiths Ferry diversion dam and reservoir	1,334,000
Smiths Ferry-Scriver Creek tunnel	9,189,000
Scriver Creek powerplants	17,323,000
Scriver Creek Dam and Reservoir	2,954,000
Scriver Creek-Garden Valley tunnel	3,828,000
Total	40,540,000
Garden Valley Dam and Reservoir	21,973,000
Garden Valley powerplant	5,877,000
Boise-Payette aqueduct (including More's Creek tunnel)	115,873,000
Hillcrest division:	
Main canal system	11,477,000
Swan Falls pumping plant	2,145,000
Lateral system	4,350,000
Drainage	2,175,000
Long Tom division:	
Diversion dam on Boise River	1,943,000
Long Tom tunnel	17,479,000
Canyon Creek diversion dam	175,000
Long Tom main canal system	3,186,000
Lateral system	5,250,000
Drainage	2,625,000
Other miscellaneous items	19,066,000
Total for entire project	253,234,000

For the alternate plan, the estimated cost by the Bureau is $76,829,000. Tabulation of the alternate plan follows:

Deer Flat pumping system (from Snake River to Deer Flat Reservoir)	$4,963,000
Boise Valley drainage, 515 wells	7,190,000
Canyon Creek powerplant	5,394,000
Lucky Peak powerplant	7,508,000
Hillcrest division	1,140,000
Long Tom division	41,160,000
Farm unit development	468,000
General property	1,044,000
Existing reservoirs:	
Arrowrock Reservoir	307,000
Lucky Peak Reservoir	7,655,000
Total for entire project	76,829,000

Mr. ASPINALL. Unless there is objection, the statement by Mr. Houston which was filed with the committee will be made a part of the record as if read.

Hearing no objection, it is so ordered.

(The statement referred to follows:)

THE DEVELOPMENT OF THE SNAKE RIVER PROJECTS AS REASONABLE COMPONENTS OF A SYSTEM WITH BOTH HYDROELECTRIC AND THERMAL-ELECTRIC GENERATING RESOURCES

(Prepared by Holland H. Houston, June 1955)

INTRODUCTION

Purpose of this study

The river discharge of the Columbia and its principal tributaries varies widely from year to year. Under adverse water conditions the total potential hydroelectric resource in the area served by the Northwest power pool that can be developed at a lesser annual cost than thermal-electric generation is approximately 13.3 million average kilowatts. At the present rate of load

growth in the area served by the Northwest power pool, the total average energy requirement of the system will approach 35.8 million average kilowatts by 1985. Even though an orderly program of development of hydroelectric resources is achieved, there will be need of large amounts of thermal-electrical projects starting about 1970. Any studies relating to hydroelectric development in the Columbia River Basin must give consideration to the fact that over most of the payout period of these hydroelectric projects, they will be operated on a system which includes large amounts of thermal-electric projects.

The power and operational studies of the Army engineers review report (H. Doc. 531) completed in October 1948, assumed a Federal system with all-hydroelectric generating resources. Since the assumption had been made of only hydroelectric resources, the only question remaining to be answered was the sequence in which the hydroelectric projects were to be built. This was accomplished by the use of the so-called incremental method, which determined the relative merits of each run-of-river project or storage project as next added to the existing system. Since the system considered had only hydroelectric projects, it was necessary in an adverse water year to supplement system energy by drafting upstream storage. The relative merits of the various upstream projects were determined from their benefit-to-cost ratios, giving credit to the storage reservoirs for downstream benefits accuring from the release of storage during the adverse flow months of each water-year.

As long as the assumption of an all-hydro system was adhered to, there existed no alternate to drafting of upstream storage to supplement system energy even though the drafting of storage drastically reduced the ability of these storage projects to carry system load.

Storage projects on a system with both hydroelectric and thermal-electric projects are operated in an entirely different manner. Under adverse flow conditions, upstream storage reservoirs are not drafted to supplement system energy. Even in years when streamflows are much better than minimum, the only value of drafting storage is to control flood flows of a stream which are in excess of the hydraulic capacities of the projects and otherwise would be spilled over the dam rather than passing through the generating units. Under the conditions of a combined hydro and thermal system, upstream storages are drafted on a forecast basis. Snow surveys are reviewed prior to the drafting of storage to assure that the drafting will result in additional system energy and a corresponding saving in fuel by reducing the hours of operation of the thermal-electric projects.

To summarize, upstream storage is operated in such a fashion as to make a maximum contribution to system energy over a long period of time. The supplementing of system energy in an adverse water year is accomplished by operating the thermal-electric projects of the system the necessary additional hours to furnish system energy requirements.

It is the purpose of this study to analyze system operation of a combined hydroelectric and thermal-electric system, to determine whether or not existing hydroelectric projects and those proposed for construction in the immediate future are so designed that they will have operating characteristics which will make them reasonable components of this combined system. Since the midpoint of the economic life of projects now being considered for immediate construction is approximately 30 years in the future, the operating conditions of 1985 on the system of the Northwest power pool have been used as the basis of this study.

Special consideration will be given to the projects proposed for the development of the middle Snake River Basin.

CONCLUSIONS

(1) The power studies of both House Document 531 (Army engineers review report for the Columbia River) and House Document 473 by Department of Interior, have been based on the assumption of an all-hydro all-Federal system.

(2) The incremental method, which considers the value of a project as next added to a known system with a given load, has been used to determine the value of projects. This method gives the value of the project when added to the system and not its value over the pay-out period.

(3) Projects have been evaluated in terms of nominal prime power, load-factored by daily pondage to 75 percent load factor.

(4) Mr. Lesher Wing, regional engineer of the Federal Power Commission, stated in the Hells Canyon hearing before the Federal Power Commission, that

the incremental method is not suitable for comparing mutually incompatible projects which would be built in the same reach of the river. Upstream storage and thermal-electric projects have an operational incompatibility which requires that the changing values of storage be evaluated by the dependable capacity average energy method over the life of the project.

(5) At the present rate of electric load growth in the Pacific Northwest, all available hydro less costly than steam-electric projects will be in operation by 1970.

(6) Upstream storage must be drafted in an adverse water year to supplement system energy on a system with only hydrogenerating resources.

(7) On a system with both thermal and hydroelectric generating resources, thermal projects are operated more hours of the day in an adverse water period to supplement system energy.

(8) On a system with both thermal and hydro generating resources, storage in an adverse water year is not drafted and the natural flow of the stream is load factored to give tne project maximum capacity value.

(9) The dependable capacity average energy method of analysis is most generally used to determine the relative values of projects proposed for a system with both thermal and hydro resources.

(10) The value of the storage in the proposed high-head Hells Canyon project becomes zero as steam-electric projects are added to the system. This will occur by 1970 at the latest.

(11) The amount of storage required to control the 1894 flood to 800,000 cubic feet per second at The Dalles is between 20 and 25 million acre-feet.

(12) There is presently about 14 million acre-feet of storage in the basin.

(13) Since the total amount of storage required in the basin is determined by flood control and not power, it is essential that all future additions to storage be so located as to make real contribution to local flood control, flood control on the lower Columbia and be effective in storing flood flows for power that would otherwise be spilled.

(14) The annual cost of a federally constructed project is about 5 percent of plant investment. A private company pays about 7 percent more in taxes and cost of money. The Idaho Power Co. could build the three low-head projects, pay 12 percent annual cost, and still sell the power at a lower rate than it could be sold for from a federally constructed high dam.

(15) The advocating of the incremental method used in House Document 473 as a means of evaluating upstream storage at a time when the American Section of the International Joint Commission is negotiating with Canada regarding the value of the Libby project storage in Montana and other storage entirely in Canada, certainly is a disservice to the electric rate payer of the Pacific Northwest.

SECTION I. SUMMARY

The power studies of House Document 531

The power studies of the Army engineers review report, House Document 531, have set a pattern which has been in continuous use in the Pacific Northwest since about 1946 for the purpose of analyzing the relative merits of the various hydroelectric projects proposed for development on the Columbia River and its principal tributaries. The assumptions of House Document 531 included the development of an all-hydro all-Federal system, separated from existing utilities in the area.

Since no thermal-electric generation was considered in the power studies, it was necessary to develop annual and cyclical storage to supplement system energy in adverse flow years and months. The amount of salable power on the system was assumed to be that produced from the minimum regulated streamflow load factored to 75 percent.

The only detailed studies on this basis were the studies relating to the C–2 system which was supposed to serve the needs of the area until sometime between 1959 and 1965.

The power studies of the D level of development were made with the use of mass energy curves which is an approximate method of determining the total energy available from streamflow which could be converted into electrical energy with suitable hydroelectric projects.

At no time have the proposed projects in the Columbia River Basin been placed on the load-duration curves of the Northwest power pool to determine what portion of available energy is usable on the system load. Since the available amount of salable power in an adverse flow year was dependent upon upstream storage, these studies showed the need of approximately 41 million

acre-feet of upstream storage necessary if an all-hydro system were used to serve the D level of load.

Electric load growth in the Pacific Northwest

Historic data relating to electric load growth in the Pacific Northwest and the Nation as a whole, is shown on figure V, section III of this report. The rate of load growth from 1915 to date has averaged about 6.8 percent per annum or as the rule of thumb would state, has doubled about every 10 years.

This rate of load growth in the Pacific Northwest is practically identical to the rate of growth of electric energy sales for the United States as a whole. Studies have shown that the total average energy which can be developed in the Columbia River Basin less costly than thermal-electric generation is approximately 13.3 million average kilowatts. As shown on figure V, if an orderly program of hydorelectric development can be carried out in the Pacific Northwest, all available low-cost hydroelectric projects will be developed by about 1970 to 1971. Sometime before this date, it will be necessary to begin construction of large thermal-electric projects similar to the construction now underway in California.

Operation of a system with both hydroelectric and thermal-electric generating resources

Mr. Lesher Wing, regional engineer of the Federal Power Commission, in his testimony before the Federal Power Commission with respect to the development of the Hells Canyon stretch of the Snake River, pointed out that where the problem existed of determining which of two developments should be made in the same stretch of the river (projects mutually incompatible or mutually exclusive) that the incremental method cannot be used satisfactorily in determining the better projects. The so-called dependable capacity average energy method in which each project is loaded onto the load curves of the system to which the generating resources are to be connected, is the method most universally used in making the choice between incompatible projects.

In a very real sense, thermal projects and upstream storage are incompatible. With the advent of large blocks of thermal-electric generation on the system, upstream storage reservoirs will no longer be drafted to supplement system energy in an adverse water year. Storage reservoirs will only be drafted on a forecast basis so as not to spill snowmelt floods. The additional energy required in an adverse flow year will be obtained from increased hours of operation of the thermal-electric projects. Hydroelectric projects will be operated intermittently using such flows as are available and maintaining full capacity value or load-carrying ability of all the hydroelectric projects.

Development of the Hells Canyon stretch of the Snake River

The streamflow in Hells Canyon stretch of the Snake River is already well regulated by some 8 to 10 million acre-feet of upstream storage and diversion during the flood-flow months for irrigation purposes. Any storage in this stretch of the river will find usefulness only for the next 10 or 15 years and perhaps only once in that period of time. The low-flow conditions of the water year 1936–37 have a recurrence factor of the order of once in 20 years.

With the coming of sizable blocks of thermal-electric generation, the value of storage in the Hells Canyon reach of the river for power will become zero except in small amounts of the order of 100,000 to 200,000 acre-feet for daily and weekly pondage. To attempt to justify the construction of high-head storage projects in this stretch of the river by the application of the incremental method and include benefits in the payout schedule which completely disappear during the first 10 years of the life of the project, is simply unsound.

The average cost of electric energy over the life of the projects from the 3 low-head projects if constructed with public funds, would cost about 1.98 mills per kilowatt-hour as compared with 4.95 mills per kilowatt-hour from the high-head storage project. These figures do not include cost of transmission to load centers.

To advocate the use of the incremental method and to assign unreal values to upstream storage over the life of the projects yet to be built can only serve as a distinct handicap to members of the American Section of the International Joint Commission in their dealings with the Dominion Government of Canada.

SECTION II. METHODS OF DETERMINING ELECTRIC SYSTEM OPERATION ON SYSTEMS INCLUDING BOTH THERMAL-ELECTRIC AND HYDROELECTRIC GENERATING RESOURCES

Analysis of system load

The generating resources of any electric power system are required to supply minute by minute the combined demands of all industrial, commercial, and residential customers of the system. This demand is continually changing. Electrical engineers have developed standard methods of correlating load demand and resources to serve this demand, which are used in most power studies.

A typical week such as shown in figure I represents the demands for 5 week days, a Saturday and Sunday. The hourly demands as recorded in figure I are listed in descending order of magnitude and multiplied by 4.33 to give the load-duration curve for the particular months being considered. A duration curve may be expressed either with the load demand in kilowatts and the hours of the month, or both demand and hours may be expressed as percentages. Perhaps the most useful curve is known as a peak percentage curve. This curve shows percent of energy in a given percent of peak. Figure II shows both the percent duration curve and peak percentage curve for a typical December of the western group of the power pool. In the study following, this shape is used to represent the load shape of the entire pool and is accurate within the limits of this study.

FIGURE I

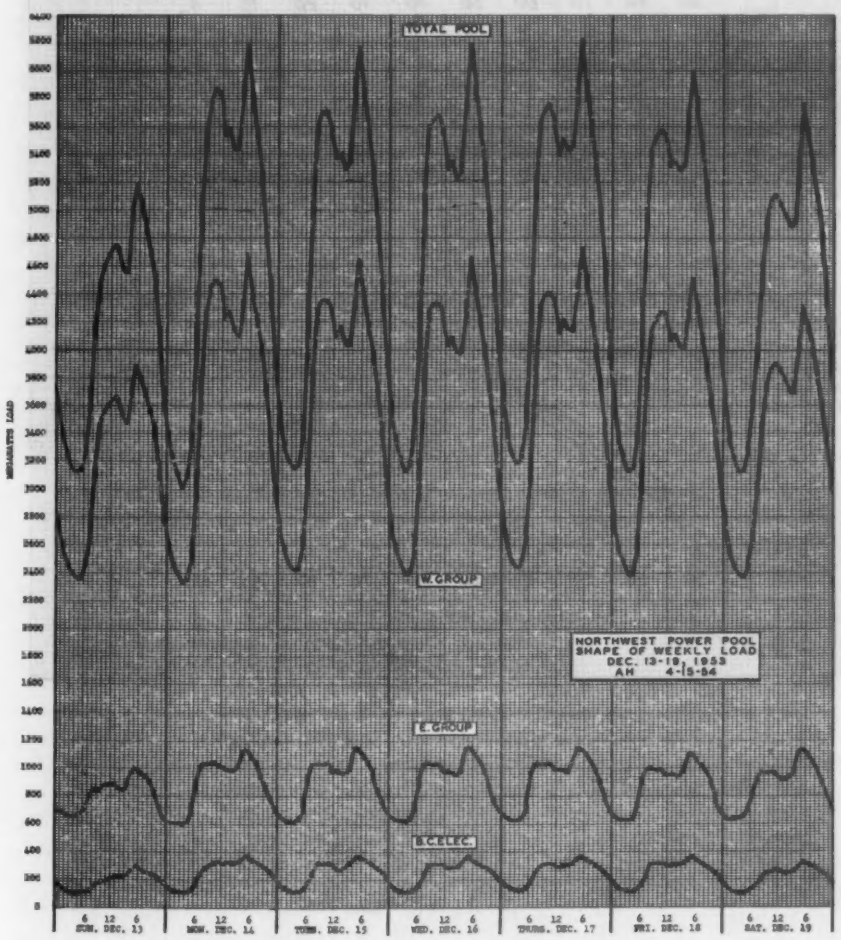
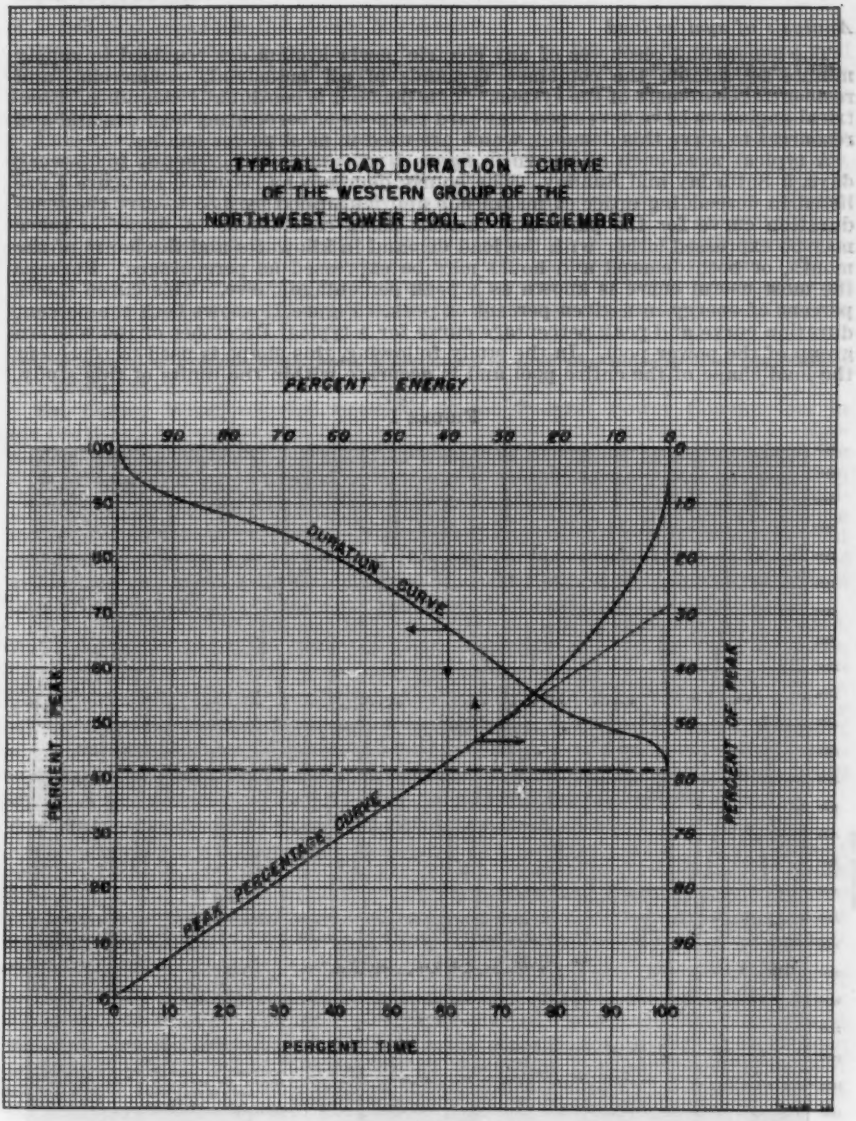


FIGURE II


TYPICAL LOAD DURATION CURVE
OF THE WESTERN GROUP OF THE
NORTHWEST POWER POOL FOR DECEMBER
PERCENT ENERGY
PERCENT PEAK
PERCENT OF PEAK
DURATION CURVE
PEAK PERCENTAGE CURVE
PERCENT TIME

Analysis of system resources

The total load demand of most electric power systems is continually increasing. There are various methods of determining total future load requirements. For the purpose of this study, the historic load growth of the systems which now comprise the Northwest power pool has been determined for the period 1915 to date, and the secular trend of both peak demands and average energy have been extrapolated to represent peak load and average energy for the year 1985. The average rate of growth was determined to be 6.8 percent each year.

The energy available from a thermal-electric project is definite and depends upon the hours of operation. Certain maintenance outages are required for cleaning of the steam generators and maintenance of auxiliary equipment. The energy capability of hydroelectric projects is dependent upon streamflow variations during the period being considered. For the purpose of this study, flow data for the period September 1928 through February 1932 was taken from a study prepared in the Seattle District Office of the United States Army Engineers, entitled "Modified Flows, Columbia River Basin, 1928 Through 1948," for the International Columbia River Engineering Committee, and dated March 19, 1951. The modified flows for this study are the observed flows modified by ultimate irrigation on the main stem and principal tributaries of the Columbia River.

The regulated flows used in determining the average energy of the hydroelectric projects during the adverse flow period in December and January are modified flows regulated by 30 million acre-feet of upstream storage. Figure III shows flow duration curves of observed, modified flow, and regulated modified flows for the 20-year period, September 1928 through September 1948.

On systems having all hydroelectric resources, it is necessary to mold streamflow to fit the continually changing load demands. This molding of streamflow energy is accomplished by daily pondage to adjust the relationship between hourly variations of load demand and streamflow energy. Annual storage is used to adjust the relationship between minimum flows and flood flows of the river and seasonal variations of electric load demand. Maximum development of a river for power on an all-hydro system requires certain additional storage (so-called cyclical storage) for storing the flows of wet-water years for release in years of adverse flow.

On electric power systems with relatively large amounts of both thermal-electric and hydroelectric resources, a very minimum amount of streamflow molding is required. The relationship between total system load demand and resources is adjusted by varying the hours of operation of thermal-electric projects. Drafting of storage reservoirs is done on a forecast basis, the idea being to draft reservoirs in amounts sufficient to control water which otherwise would be wasted. In the actual case of the Columbia River Basin, after substantial amounts of thermal-electric projects have been added to power-pool resources, storage to control the flood flows of 1894 and 1948 will be much greater than the amount of storage required for power purposes.

67129—56——23

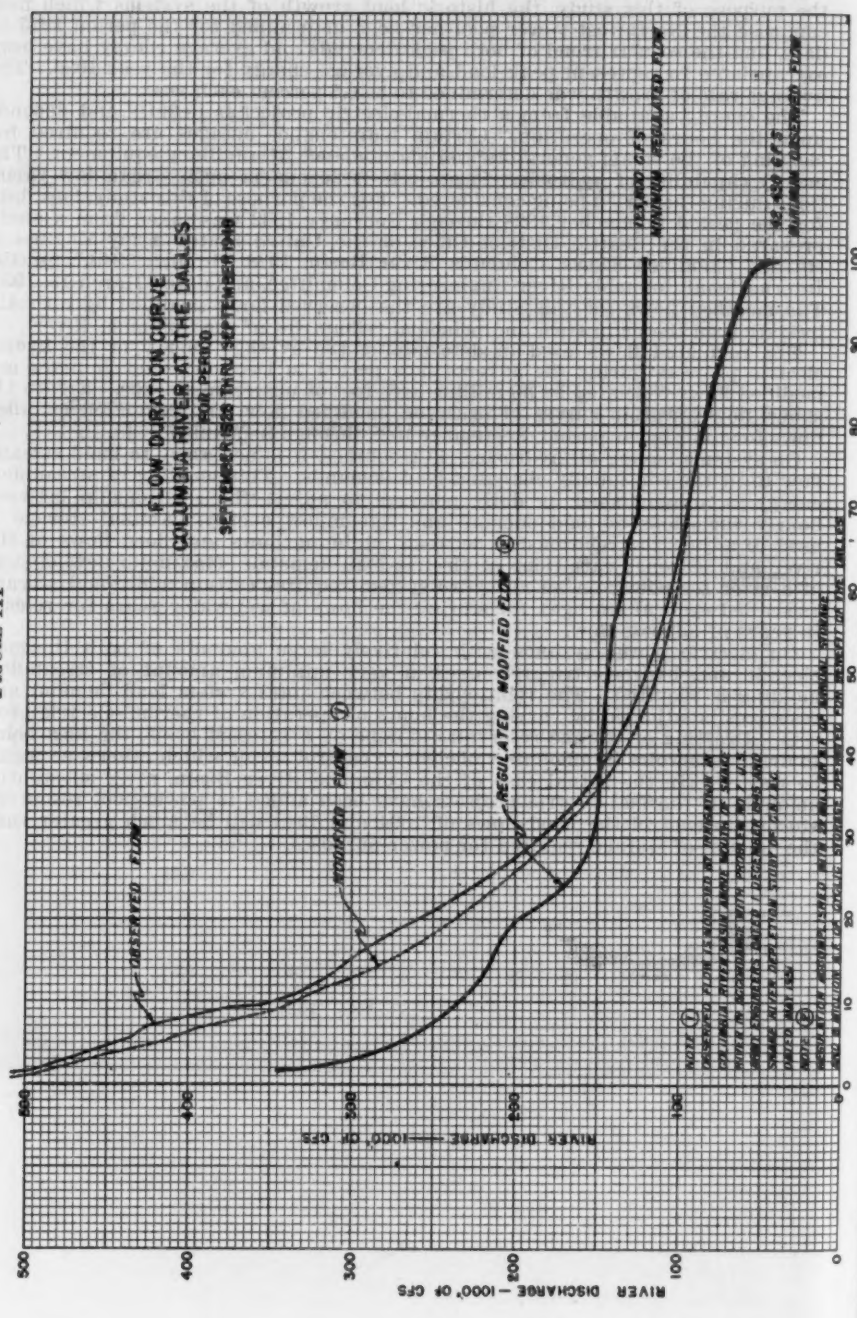

FLOW DURATION CURVE
COLUMBIA RIVER AT THE DALLES
FOR PERIOD
SEPTEMBER 1928 THRU SEPTEMBER 1948
OBSERVED FLOW
MODIFIED FLOW ①
REGULATED MODIFIED FLOW ②
RIVER DISCHARGE — 1000's CFS
PERCENT TIME
MINIMUM REGULATED FLOW
77,000 CFS
92,450 CFS
MINIMUM OBSERVED FLOW
NOTE ①
NOTE ②

FIGURE III

The system of the Northwest power pool is unique with respect to the amount of inefficient steam-electric resources now existent in the system. In the western group of the pool, there is only about 390,000 kilowatts of such generating capacity. On most of the systems in the East, these inefficient projects (which require from 16,000 to 20,000 B. t. u.'s to produce a kilowatt-hour of electricity) are assigned to peaking at the time of annual system peak load which usually occurs in the month of December. Most of the year these projects are idle. These low efficiency projects built at a much earlier date are not competitive with the modern steam-electric project with a heat requirement of 9,200 B. t. u. per net kilowatt-hour or less.

Here in the Pacific Northwest, with only 390,000 kilowatt-hours of low-efficiency projects, we must choose between the construction of new thermal-electric projects to carry system peak loads or provide similar amounts of peaking capacity in the form of additional units in the hydroelectric projects. In both instances, the additional cost of transmission to the principal load centers must be included in the calculations.

The value of power in the Pacific Northwest

In a report entitled "Review Report on the Middle Snake River Basin," dated December 22, 1953, part II, appendix D includes a determination by the Federal Power Commission of the value of power in the Pacific Northwest. In this report the Federal Power Commission recommends that for this review study a value of $16.50 for capacity and 3.34 mills per kilowatt-hour for energy be used. Such a two-part rate, one representing annual cost in installed generating capacity and the other energy value, is essential to any study of a power system with both hydroelectric and thermal-electric resources.

The value of power at a hydro project is determined by subtracting from value of power at the load center the cost of transmitting the power from the project to the load center and allowing for both capacity and energy losses incurred in the transmission to the load center. Starting with a capacity value of $16.50 per kilowatt-year for capacity at load center and 3.34 mills per kilowatt-hour for energy and allowing a 10-percent loss of capacity and 7-percent energy, we obtain the value of power at the project of $8.35 per kilowatt-year capacity value and 3.11 mills per kilowatt-hour for energy value.

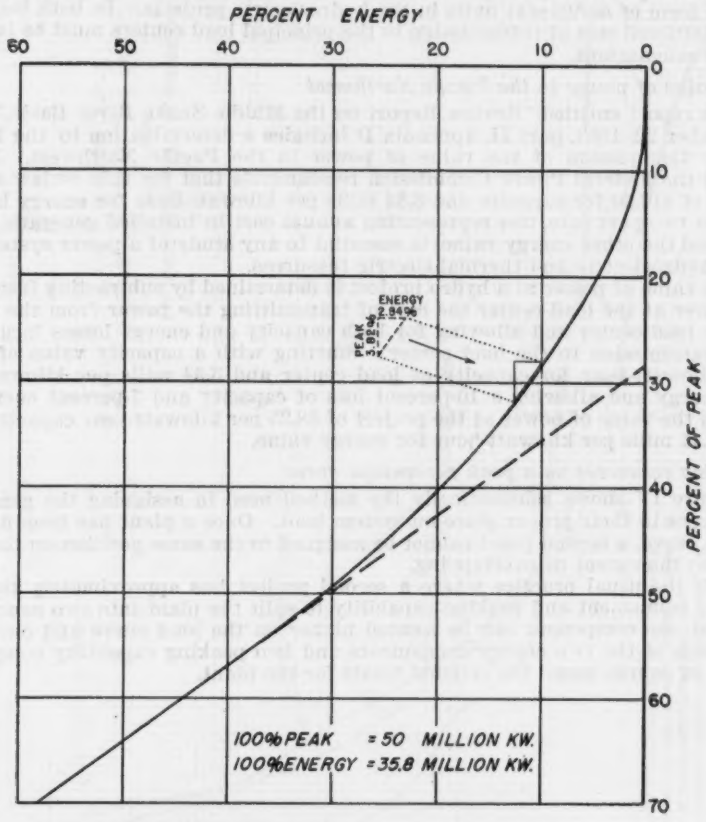
Loading resources on a peak percentage curve

Figure IV shows schematically the method used in assigning the generating resources in their proper place on system load. Once a plant has been assigned to the curve, a second plant cannot be assigned to the same position on the curve even to the extent of overlapping.

It is the usual practice where a second project has approximately the same energy component and peaking capability to split the plant into two components so that one component can be located higher on the load curve and one below. The sum of the two energy components and two peaking capability components must, of course, equal the original totals for the plant.

FIGURE IV

AN EXAMPLE SHOWING METHOD
OF LOADING A PEAK PERCENTAGE CURVE



CHIEF JOSEPH PROJECT, WITH 27 UNITS, USED AS AN EXAMPLE
80,000 C.F.S. MINIMUM REGULATED FLOW
150,000 C.F.S. HYDRALIC CAPACITY
12.73 KW. PER C.F.S. = AT SITE "K"
80,000 X 12.73 = 1,020,000 KW. AVERAGE ENERGY
150,000 X 12.73 = 1,911,000 KW. PEAKING CAPABILITY

$\frac{1,020,000}{35.8 \times 10^6} = 2.84\%$ ENERGY $\qquad \frac{1,911,000}{50 \times 10^6} = 3.82\%$ PEAK

Referring to figure IV, Chief Joseph has been used as a typical example of assigning a project to the peak percentage curve. The minimum regulated flow at the Chief Joseph project with sufficient upstream storage for flood control (15 million to 18 million acre-feet), is about 80,000 cubic feet per second. The maximum hydraulic capacity of 27 units at 5,500 cubic feet per second per unit is 150,000 cubic feet per second. The at-site K for a gross head of 176.5 feet is 12.73. The product of minimum regulated flow: 80,000 cubic feet per second times (at-site K) 12.73 equals 1,020,000 kilowatts, as the average energy component of this project. The hydraulic capacity: 150,000 cubic feet per second times (at-site K) 12.73 equals 1,911,000 kilowatts, the maximum peaking capability of the project.

The total peak load for the entire system is 50 million kilowatts. The average energy requirement is 35.8 million kilowatts. The average energy of Chief Joseph and the peaking capability of Chief Joseph are 2.84 percent and 3.82 percent, respectively. Referring again to figure IV, these components are plotted adjacent to the curve and transferred so that the hypotenuse of the triangle is tangent to the peak percentage curve. If this particular project were assigned higher on the curve, it would be found that in carrying the assigned load, water would be spilled over the dam. If the project were assigned lower on the curve, there would not be sufficient energy to firm the peaking capability.

SECTION III. ELECTRIC GENERATING RESOURCES REQUIRED TO SERVE SYSTEM LOAD OF THE NORTHWEST POWER POOL IN 1985

System load growth

Figure V is a chart showing load growth of those systems which now comprise the Northwest power pool from about 1915 to date. The secular trend of system peaks and average energy has been extrapolated to the year 2,000. The average rate of growth represented by these curves is 6.8 percent each year. Also included in figure V is a plot of total energy sales for the United States as a whole. The secular trend of the growth in the sales of energy is also about 6.8 percent each year. This rate of growth is equivalent to the load doubling in each 10-year period and is quite typical throughout the industry.

Reference to figure V indicates that the peak load on the Northwest power pool system by 1985 will equal 50 million kilowatts. The average energy corresponding to this peak will be about 35.8 million average kilowatts for a load factor of 71.5 percent. Since there is only 13.3 million average kilowatts available from the hydroelectric projects in the area in an adverse December and the total requirements are 35.8 million kilowatts of average energy, it means that some 22.5 million average kilowatts of energy must be supplied from thermal-electric resources.

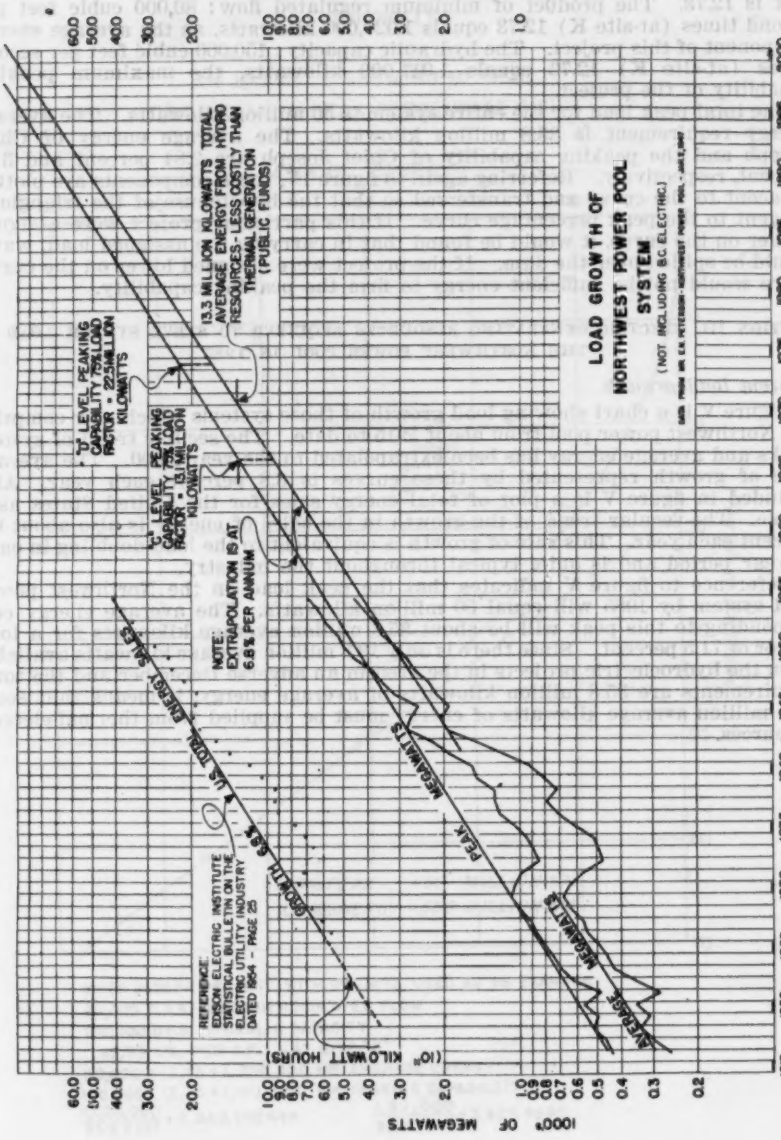

LOAD GROWTH OF NORTHWEST POWER POOL SYSTEM
(NOT INCLUDING B.C. ELECTRIC)
13.3 MILLION KILOWATTS TOTAL AVERAGE ENERGY FROM HYDRO RESOURCES - LESS COSTLY THAN THERMAL GENERATION (PUBLIC FUNDS)
"b" LEVEL PEAKING CAPABILITY 75% LOAD FACTOR - 2.25 MILLION KILOWATTS
"a" LEVEL PEAKING CAPABILITY 75% LOAD FACTOR - 3.1 MILLION KILOWATTS
NOTE: EXTRAPOLATION IS AT 6.8% PER ANNUM
U.S. TOTAL ENERGY SALES
GROWTH 6.8%
PEAK MEGAWATTS
AVERAGE MEGAWATTS
REFERENCE EDISON ELECTRIC INSTITUTE STATISTICAL BULLETIN ON THE ELECTRIC UTILITY INDUSTRY DATED 1964 - PAGE 25
(10^9 KILOWATT HOURS)
1000's OF MEGAWATTS

FIGURE V

Assumptions of House Document 531

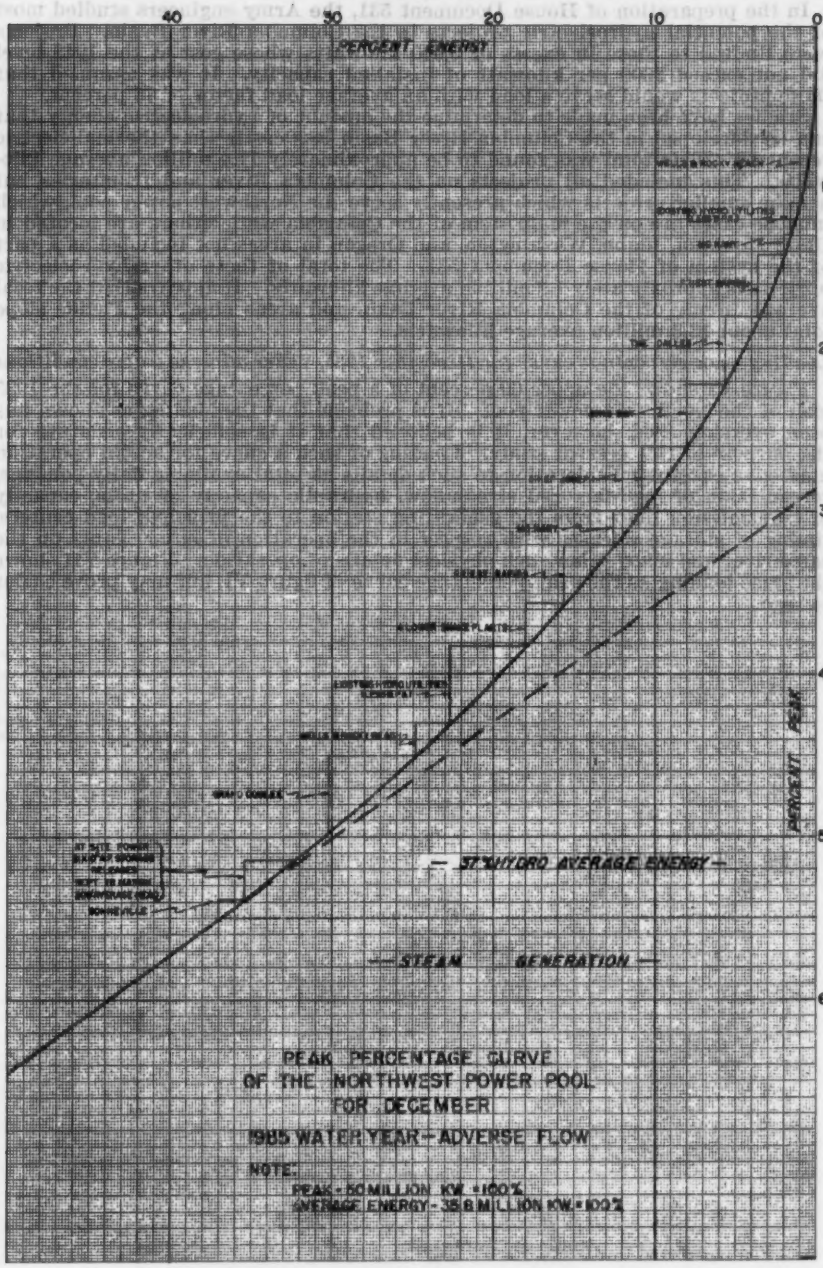
In the preparation of House Document 531, the Army engineers studied most of the potential hydroelectric projects in the Columbia River Basin. Projects were limited to those in excess of 5,000 kilowatts whose cost at the 1948 level did not exceed $600 per kilowatt of installed capacity. It was assumed that these projects would serve a load with an average load factor of 75 percent.

Studies have been made to determine the amount of hydroelectric energy that can be developed in the Columbia River Basin less costly than thermal-electric resources. This total was found to be approximately 11.4 million average kilowatts. This included all projects on the Columbia River and tributaries but not the smaller projects which presently serve the Northwest power pool, which in some cases are on the main stem of the Columbia while others are located in Utah, Montana, Idaho, Washington, and Oregon in areas not included as a part of the system of House Document 531. The total of these other hydroelectric projects is approximately 1.9 million average kilowatts. It appears that the total average energy of the Columbia River Basin and areas along the Pacific slope total about 13.3 million average kilowatts.

Loading peak percentage curve for December 1985, under adverse water conditions

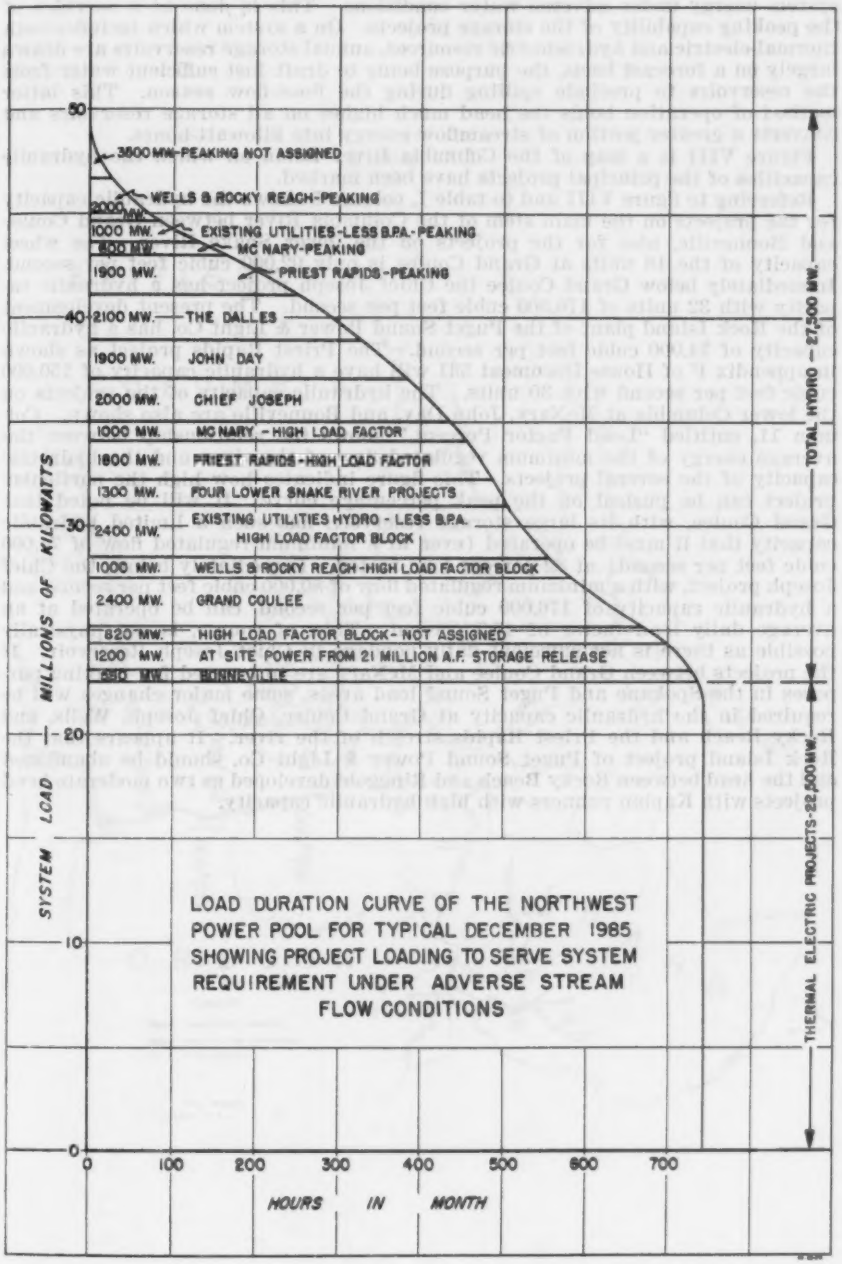
Figure VI shows the upper 60 percent of a peak percentage curve for the 1985 load of the Northwest power pool. It is probable that the loading as shown has been oversimplified, however, it is believed that it is sufficiently accurate for the purpose of this present study. Loading of such a curve for actual operation must give careful consideration to such details as total available daily pondage, reregulation of load-factored streamflow, hydraulic capacity of units, capacity of transmission lines from the generating station to the principal load centers, timing of storage releases with respect to the operation of other plants on the same river and many other such physical details of operation. Figure VII shows the same loading as the peak percentage curve of figure VI, but may prove easier to read.

FIGURE VI



The average load factor of the total hydroelectric energy as shown in figure VII is about 48 percent. It should be noted that not a single project in the entire basin is operating continuously. Some projects assigned near the peak of the load curve operate only an hour or two each weekday and store water the balance of the time. The thermal-electric projects are assigned to base load operation and operate around the clock to furnish the necessary system energy.

FIGURE VII


3600 MW-PEAKING NOT ASSIGNED
2000 MW.
WELLS & ROCKY REACH-PEAKING
1000 MW.
EXISTING UTILITIES-LESS B.P.A.-PEAKING
600 MW.
MC NARY-PEAKING
1900 MW.
PRIEST RAPIDS-PEAKING
2100 MW.
THE DALLES
1900 MW.
JOHN DAY
2000 MW.
CHIEF JOSEPH
1000 MW.
MC NARY - HIGH LOAD FACTOR
1800 MW.
PRIEST RAPIDS-HIGH LOAD FACTOR
1300 MW.
FOUR LOWER SNAKE RIVER PROJECTS
2400 MW.
EXISTING UTILITIES HYDRO - LESS B.P.A. HIGH LOAD FACTOR BLOCK
1000 MW.
WELLS & ROCKY REACH-HIGH LOAD FACTOR BLOCK
2400 MW.
GRAND COULEE
820 MW.
HIGH LOAD FACTOR BLOCK - NOT ASSIGNED
1200 MW.
AT SITE POWER FROM 21 MILLION A.F. STORAGE RELEASE
480 MW.
BONNEVILLE
TOTAL HYDRO — 27,500 MW.
THERMAL ELECTRIC PROJECTS-22,500 MW.
LOAD DURATION CURVE OF THE NORTHWEST POWER POOL FOR TYPICAL DECEMBER 1985 SHOWING PROJECT LOADING TO SERVE SYSTEM REQUIREMENT UNDER ADVERSE STREAM FLOW CONDITIONS
SYSTEM LOAD MILLIONS OF KILOWATTS
50
40
30
20
10
0
0
100
200
300
400
500
600
700
HOURS IN MONTH

The operation of upstream storage reservoirs used to store annual flood flows is entirely different on a system with all-hydroelectric resources than it is on a system including large amounts of both hydroelectric and thermal-electric generation. On the all-hydro system, reservoirs must be drawn to supplement system energy under adverse water conditions. This is done at a sacrifice of the peaking capability of the storage projects. On a system which includes both thermal-electric and hydroelectric resources, annual storage reservoirs are drawn largely on a forecast basis, the purpose being to draft just sufficient water from the reservoirs to preclude spilling during the flood-flow season. This latter method of operation holds the head much higher on all storage reservoirs and converts a greater portion of streamflow energy into kilowatt-hours.

Figure VIII is a map of the Columbia River Basin on which the hydraulic capacities of the principal projects have been marked.

Referring to figure VIII and to table I, column 5 shows the hydraulic capacity for the projects on the main stem of the Columbia River between Grand Coulee and Bonneville, also for the projects on the lower Snake River. The wheel capacity of the 18 units at Grand Coulee is only 92,000 cubic feet per second. Immediately below Grand Coulee the Chief Joseph project has a hydraulic capacity with 32 units of 176,000 cubic feet per second. The present development of the Rock Island plant of the Puget Sound Power & Light Co. has a hydraulic capacity of 74,000 cubic feet per second. The Priest Rapids project as shown in appendix F of House Document 531 will have a hydraulic capacity of 150,000 cubic feet per second with 30 units. The hydraulic capacity of the projects on the lower Columbia at McNary, John Day, and Bonneville are also shown. Column 11, entitled "Load Factor Percent," shows the relationship between the average energy of the minimum regulated flow of the river and the hydraulic capacity of the several projects. This figure indicates how high the particular project can be pushed on the peak percentage curve. It will be noted that Grand Coulee, with its large storage reservoir, has such a limited hydraulic capacity that it must be operated (even at a minimum regulated flow of 74,000 cubic feet per second) at 82 percent load factor. Immediately below, the Chief Joseph project, with a minimum regulated flow of 80,000 cubic feet per second and a hydraulic capacity of 176,000 cubic feet per second, can be operated at an average daily load factor of 45.5 percent. This, of course, is not physically possible as there is not sufficient daily pondage in Chief Joseph Reservoir. If the projects between Grand Coulee and McNary are to be used for peaking purposes in the Spokane and Puget Sound load areas, some major changes will be required in the hydraulic capacity at Grand Coulee, Chief Joseph, Wells, and Rocky Reach and the Priest Rapids stretch of the river. It appears that the Rock Island project of Puget Sound Power & Light Co. should be abandoned and the head between Rocky Beach and Ringgold developed as two moderate head projects with Kaplan runners with high hydraulic capacity.

FIGURE VIII

BRITISH
COLUMBIA
WASHINGTON
OREGON
IDAHO
MONTANA
186,000
276,000
92,000
182,000
74,000
45,800
150,000
120,000
252,000
61,500
330,000
264,000
LEGEND
CONSTRUCTED PROJECTS
PROJECTS UNDER CONSTRUCTION
OTHER PROJECTS

TABLE I.—*Project data*

Project	Number of units (ultimate)[1]	Installed capacity (kilowatts)	Feet of head	Regulated modified flow (cubic feet per second)	Hydraulic capacity of plant (cubic feet per second)	At-site K (kilowatts per cubic feet per second)	Average energy		Peaking capability		Load factor (percent)
							Kilowatts	Percent	Kilowatts	Percent	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Grand Coulee	18	1,940,000	343.0	74,000	92,000	25.4	1,880,000	5.25	2,340,000	4.67	82.0
Chief Joseph	32	2,040,000	176.5	80,000	176,000	12.73	1,020,000	2.86	2,240,000	4.50	45.5
Wells	[2] 12	590,000	63.0	85,000	186,000	4.7	400,000	1.12	590,000	1.18	68.0
Rocky Reach	[2] 14	586,000	90.0	85,000	182,000	6.7					
Rock Island		245,000	32.0	85,000	74,000	2.16	171,000	.48	171,000	.35	100.0
Priest Rapids	30	1,600,000	150.0	85,000	150,000	10.7	910,000	2.54	1,600,000	3.20	57.0
Ringold				85,000		3.6					
Lower Granite	5	275,000	81.0	30,000	45,800	6.0	180,000	.50	275,000	.55	65.0
Little Goose	7	455,000	99.0	30,000	61,500	7.4	180,000	.50	455,000	.91	39.5
Lower Monumental	7	420,000	92.0	30,000	61,600	6.8	180,000	.50	420,000	.84	43.0
Ice Harbor	7	455,000	98.0	30,000	62,300	7.3	180,000	.50	455,000	.91	39.5
McNary	20	1,600,000	83.0	117,500	264,000	6.1	717,000	2.0	1,600,000	3.2	45.0
John Day	18	1,770,000	94.0	123,800	252,000	7.0	866,000	2.42	2,100,000	4.2	41.2
The Dalles	22	1,720,000	85.0	123,800	330,000	6.3	780,000	2.18	2,080,000	4.15	37.5
Bonneville	10	580,000	60.0	123,800	120,000	4.5	558,000	1.55	558,000	1.12	100.0
Rocky Reach to McNary		3,000,000	272.0	85,000		19.6	1,670,000	4.66		5.5	

[1] Source: Appendix O, table 21.
[2] Source: Appendix F.

It is difficult to understand why the hydraulic capacity of McNary, John Day, and the Dalles are of the order of 300,000 to 330,000 cubic feet per second unless the hydraulic capacities of the main stem above the Snake and that of the four lower Snake River projects are coordinated with the hydraulic capacities on the lower Columbia.

The reason for suggesting Kaplan runners in the stretch of the river between Rocky Reach and Ringold is the greater hydraulic capacity of this type of water wheel. At the present development of the art a Francis-type runner has a maximum hydraulic capacity of approximately 5,500 cubic feet per second. Kaplan runners can be built with a hydraulic capacity of 15,000 cubic feet per second. The use of Kaplan runners makes it possible to get more hydraulic capacity within a limited width of the river, thus decreasing the incremental cost of additional units in a project where river width is a problem.

Effect of load-factoring streamflow upon the economic height of dams

A study of appendix F, House Document 531, plate 2, discloses a relationship between reservoir levels and tailwater heights which are not suitable if streamflow between Grand Coulee and the mouth of the Snake River is load-factored to a 6- to 8-hour flow of 220,000 to 250,000 cubic feet per second.

Table II lists tailwater levels for certain indicated flows as taken from the tailwater rating curves in appendix F and the pond level of the reservoir of the project next downstream. Table II also includes lost head by reason of insufficient overlap at each of these projects. Not all of this lost head can be recovered because higher flows result in increased hydraulic gradient.

TABLE II.—*Power lost at time of load-factored minimum flow*

[In feet]

	Upper project tailwater	Lower project reservoir level	Head loss
Grand Coulee	963		
Chief Joseph		946	17
Chief Joseph	782		
Wells		767	15
Wells	719		
Rocky Reach		699	20
Rocky Reach	624		
Rock Island		604	20
Rock Island	569		
Priest Rapids		550	19
Priest Rapids	415		
Ringold		400	15
Total head loss			106
Adjustment for hydraulic gradient			24
Net recoverable head			82

NOTE.—Power loss: $P=0.072\times H\times Q=0.072\times 82\times 220{,}000=1{,}420{,}000$ kilowatts peaking capability.

$\frac{1{,}420{,}000}{3}=420{,}000$ kilowatts average energy.

Effect of increased hydraulic capacity of downstream run-of-river projects on storage requirements for power

As previously described, the operation of upstream storage reservoirs on a system with large amounts of both thermal-electric and hydroelectric projects is on a forecast basis in such a manner as to decrease to a minimum the spilling of water. The increasing and proper coordinating of the hydraulic capacities on the main stem of the Columbia between Grand Coulee and Bonneville and a similar balancing of hydraulic capacities on the lower Snake River will greatly reduce the need of upstream storage for power. It must be remembered, however, that the control of floods such as the floods of 1894 and 1948 requires from 20 million to 25 million acre-feet of flood-control storage.

Figure IX was prepared directly from figure III and shows the percent of the annual average river discharge for the 20-year period September 1928 through September 1948, which is above various cubic feet per second flows at The Dalles. The modified flow data of figure III was used in the preparation of figure IX.

Let us consider the example of The Dalles project with a hydraulic capacity of 330,000 cubic feet per second. In this 20-year period, 94 percent of river discharge by The Dalles is within the hydraulic capacity of the project. The average annual river discharge at The Dalles during this 20-year period was 119.5 million acre-feet. With 94 percent of this flow within the hydraulic capacity of The Dalles project, only 6 percent need be stored to make use of the entire river flow for power purposes. Six percent of 119.5 million acre-feet is only 7.2 million acre-feet. Figure X shows the relationship between the observed average monthly flows at The Dalles and the ultimate hydraulic capacity of The Dalles project now under construction.

System operation under the assumptions of House Document 531

House Document 531 established certain levels of electric load, calling them phases A, B, C, D, E, and F. No attempt was made to establish a chronological sequence with respect to these several levels of load. The two most important were the C and D levels.

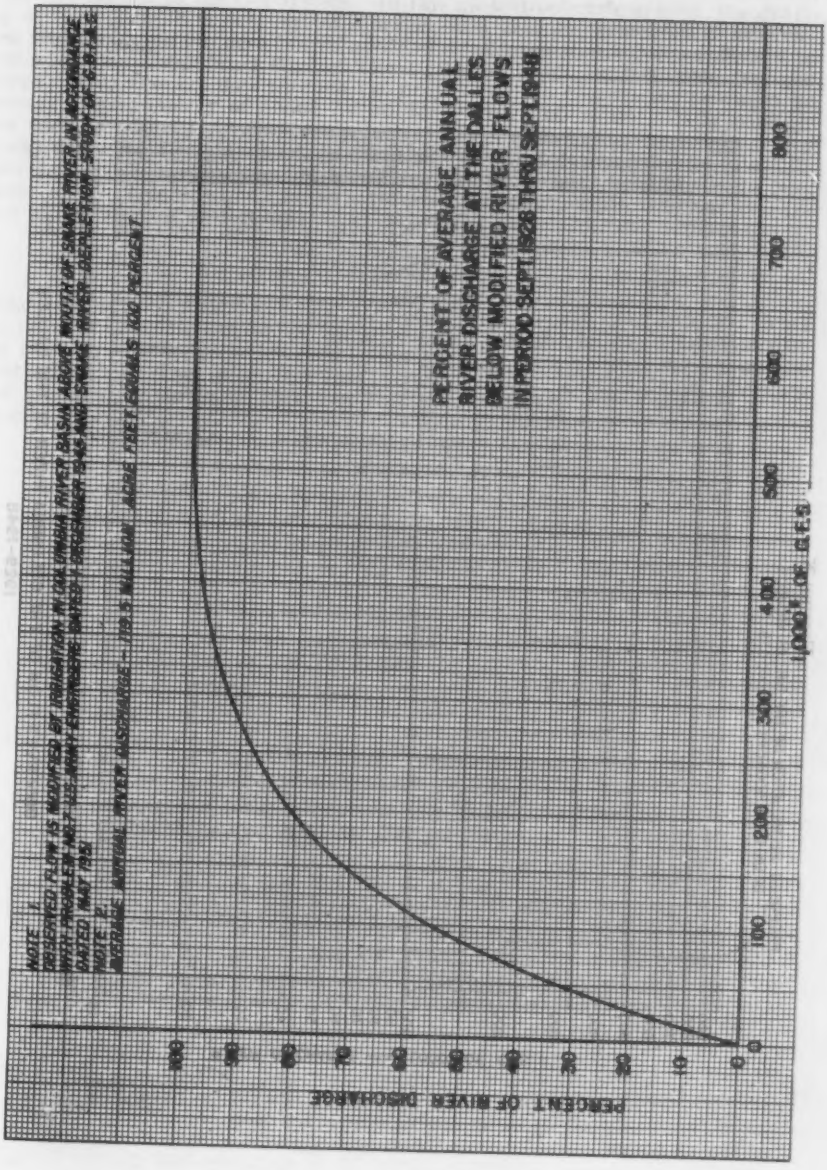

PERCENT OF AVERAGE ANNUAL
RIVER DISCHARGE AT THE DALLES
BELOW MODIFIED RIVER FLOWS
IN PERIOD SEPT 1928 THRU SEPT 1948
PERCENT OF RIVER DISCHARGE
1000 C.F.S.
0
100
200
300
400
500
600
700
800
NOTE 1
OBSERVED FLOW AS MODIFIED BY IRRIGATION IN COLUMBIA RIVER BASIN ABOVE MOUTH OF SNAKE RIVER IN ACCORDANCE WITH PROGRAM OF DEVELOPMENT AS OF 1948 BY BUREAU OF RECLAMATION AND CORPS OF ENGINEERS
DATED MAY 1949
NOTE 2
AVERAGE ANNUAL RIVER DISCHARGE - 72.5 MILLION ACRE FEET FOR 40 YEARS

FIGURE IX

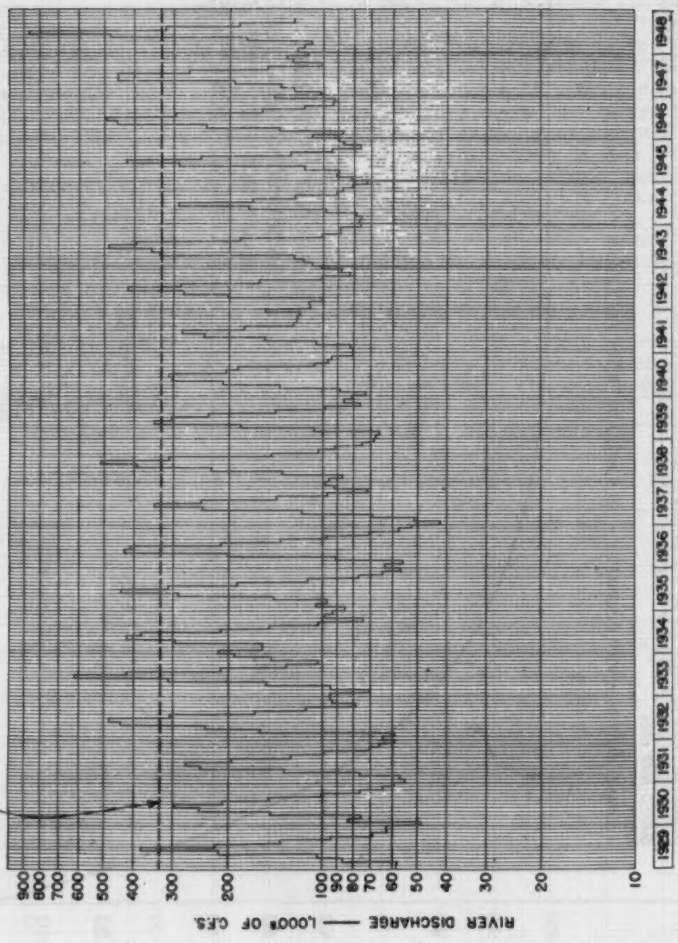

PROPOSED INSTALLATION OF THE DALLES PROJECT
22 UNITS @ 15,000 CFS. = 330,000 CFS.
RIVER DISCHARGE —— 1,000's OF C.F.S.
900
800
700
600
500
400
300
200
100
90
80
70
60
50
40
30
20
10
1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948
OBSERVED FLOW OF THE COLUMBIA RIVER AT THE DALLES
1929-1948

FIGURE X

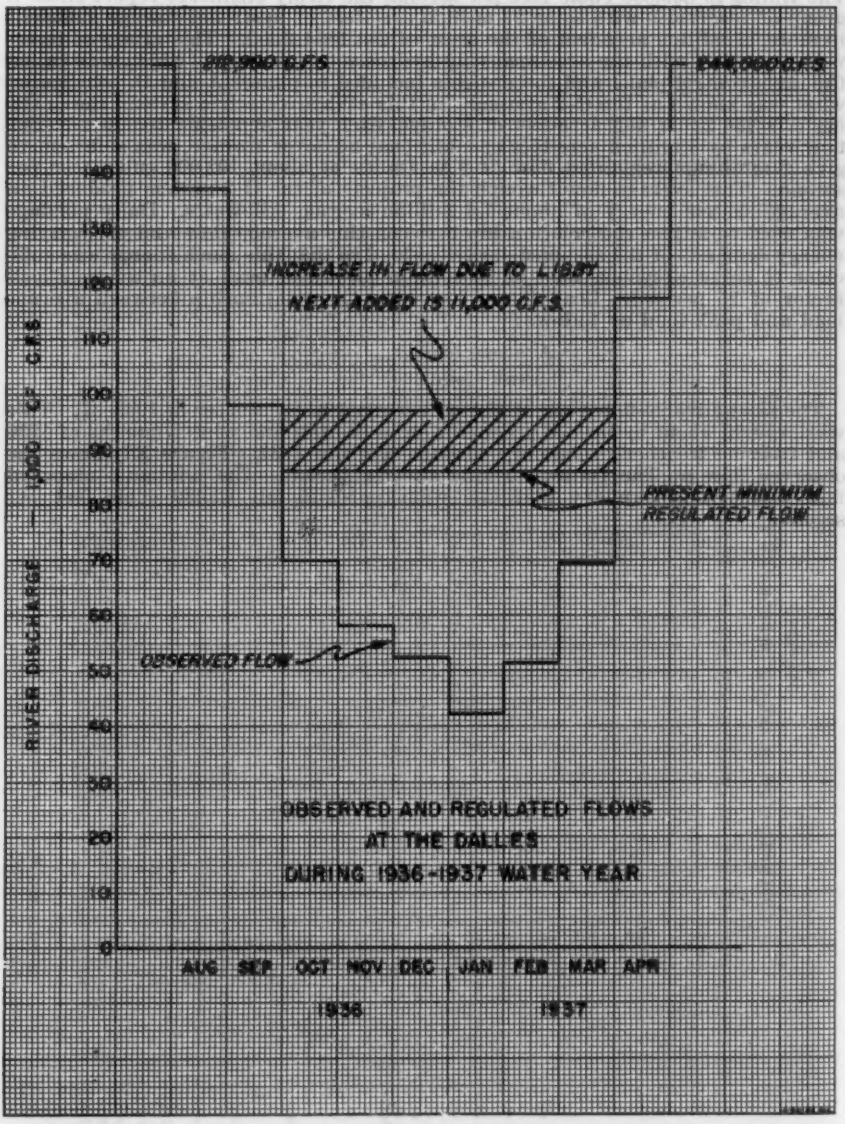
To gain reasonable control of the 1894 flood and to limit river discharge at The Dalles to 800,000 cubic feet per second, the Army engineers report chose a group of reservoirs with some 27 million acre-feet of upstream storage sufficient to store 14 million acre-feet of the crest of the 1894 flood. This group of reservoirs, together with the accompanying hydroelectric projects (which was called the main control plan) and the projects included in phases A and B, constituted what was known as the C–2 system. In this all-hydroelectric system, the drafting of some 22 million acre-feet of storage, each year supplemented in adverse-flow years by 5 million acre-feet of additional holdover storage, was sufficient to give a minimum regulated flow at The Dalles of about 102,000 cubic feet per second. This average flow through the projects of the C–2 system produced an average system energy of about 7.4 million average kilowatts. Daily pondage was used to adjust the relationship between this average flow and the varying energy demands of the assumed electrical load so that this much energy was sufficient to serve a system load of 10 million kilowatts peak at an average load factor of 75 percent. Load factor expresses the relationship between average load and peak load as follows:

$$\frac{\text{Average load}}{\text{Peak load}} = 75 \text{ percent}$$

The most adverse-flow year of history occurred in the winter of 1936–37. This was brought about by lack of precipitation in the fall and winter months of 1936 and freezing weather in January through April of 1937. Figure XI shows the observed flow at The Dalles for this adverse period. The minimum observed flow occurred in January 1937 and was approximately 42,430 cubic feet per second.

67129—56——24

FIGURE XI


INCREASE IN FLOW DUE TO LIGHT NEXT ADDED IS 11,000 C.F.S.
PRESENT MINIMUM REGULATED FLOW
OBSERVED FLOW
RIVER DISCHARGE — 1,000 C.F.S.
OBSERVED AND REGULATED FLOWS AT THE DALLES DURING 1936-1937 WATER YEAR
AUG SEP OCT NOV DEC JAN FEB MAR APR
1936
1937

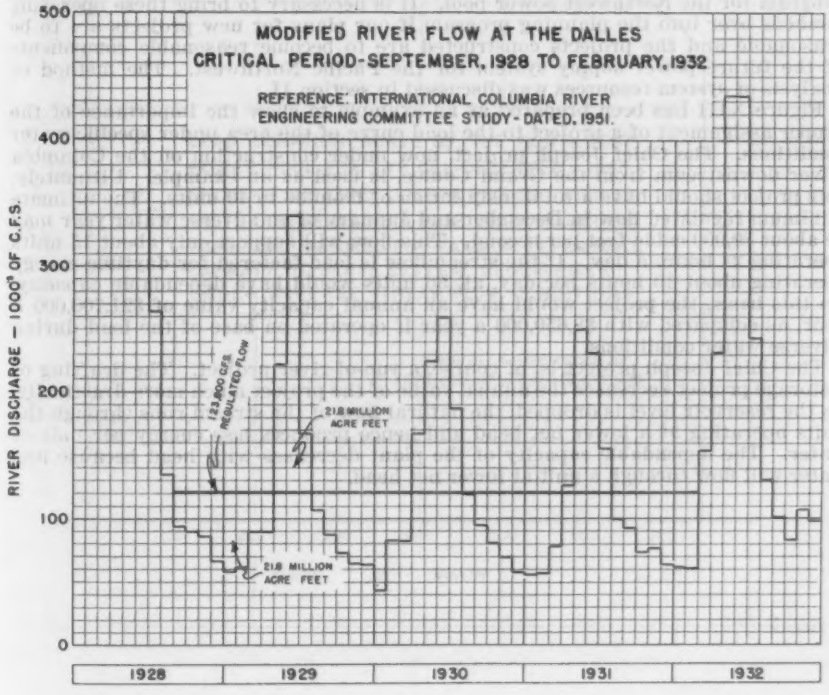
If a 600,000 acre-foot reservoir were drafted in the month of January, it would increase the regulated flow by approximately 10,000 second-feet. To increase the regulated flow another 10,000 second-feet would require that the storage draft be spread over a 3- or 4-month period, and hence more storage would be required to increase the regulated flow the second 10,000 cubic feet per second.

There is at present in the Columbia River Basin approximately 14 million acre-feet of storage usable for increasing the minimum regulated flow of the

river during adverse periods. This 14 million acre-feet would increase the minimum regulated flow in a period similar to the 1936–37 adverse period to a level of approximately 86,000 cubic feet per second. Figure XI shows the effect of drafting 4 million acre-feet annually from the proposed Libby project on the Kootenai River. For the period of 6 months' draft, the 4 million acre-feet would increase the flow at The Dalles by approximately 11,000 cubic feet per second. As the critical period expands to 8 months, this draft of 4 million acre-feet of annual storage would increase flows by only 8,200 cubic feet per second.

The Army engineers found that if additional storage was considered, on the upper reaches of the Columbia, that a level of regulation was reached where the year of 1936–37 was no longer the most critical period of history. It was found that the 42-month period from September 1928 through February 1932 imposed a greater burden on upstream storage as the amount of upstream storage approached 30 million acre-feet. Figure XII shows graphically the 42-month critical period and the storage requirement to level out the regulated flow from August 1928 through February 1932. To regulate the draft of the winter 1928–29 and the flood flows in the spring of 1929 required 21.8 million acre-feet. The average flow during this period would be 123,800 cubic feet per second. The flood flows in the spring of 1930–31 were less than the flood flow of 1929 and hence additional storage was required if it proved desirable to maintain 123,800 cubic feet per second through this period. A total of 30 million acre-feet of storage was shown to be sufficient to sustain the regulated flow at 123,800 cubic feet per second. Approximately 14 million acre-feet of this storage was cyclical or holdover storage, which must be filled in wet-water years and held for use in this low-flow period of 42 months. Since this 14 million acre-feet of storage was spread over a 42-month period, the increase in regulated flow was relatively small and the benefit derived consequently less than the benefit from storage which could be drafted annually.

FIGURE XII



The drafting of storage reservoirs to supplement system energy has the effect of reducing the load-carrying ability (dependable capacity) of all storage projects drafted. This means that plant investment is determined by the dependable capacity of system resources and in adverse water years; and that some plant capacity will be required only in an adverse water year.

This description of the molding of streamflow to fit system energy requirement has been given in considerable detail so that the change in method of operation which occurs as large blocks of thermal-electric generation are added to the system will be more readily understood.

Operation of a system with both hydro- and thermal-electric generating resources

As explained previously, the value of power at a hydro project as established by the San Francisco regional office of the Federal Power Commission is $8.35 per kilowatt-year of dependable capacity, plus 3.39 mills per kilowatt-hour of energy delivered to the transmission system.

To obtain the maximum economic value for each hydroelectric project in the area, it is important to maintain its dependable capacity as nearly as possible equal to the installed capacity of the plant. To obtain the maximum energy value from the project, it must be operated as nearly at maximum head as possible, drafting storage only so as not to spill water. Maintaining dependable capacity and at the same time using all available streamflow is accomplished by varying the hours of operation of the project and units in the projects to correspond with seasonal variations of streamflow.

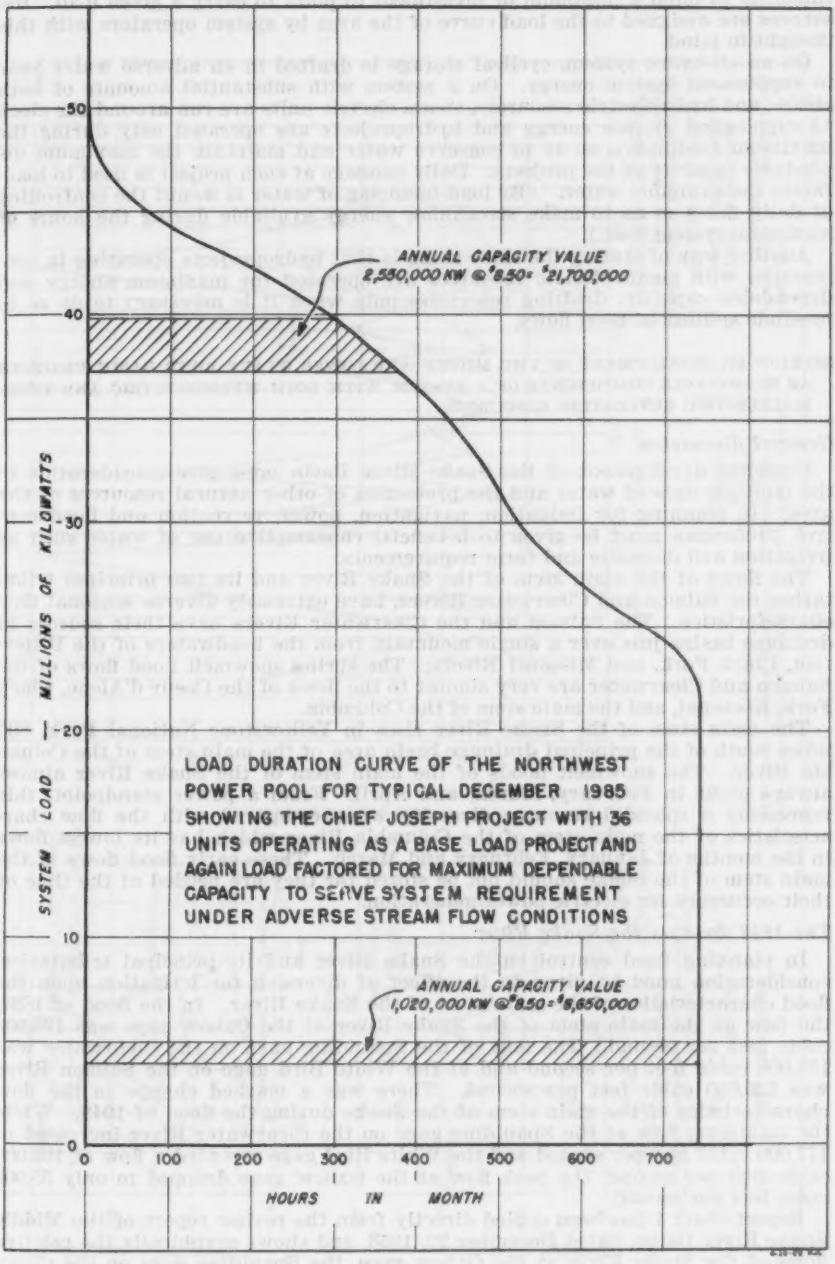
As streamflow decreases at a project, the hours of operation should decrease an equivalent amount; as streamflow increases, the hours of operation should increase.

In the Pacific Northwest, the determination of the operating characteristics of each project in the basin and the integration of all the projects in the basin, is accomplished by studies prepared under the direction of the power pool coordinators. The results of these studies are published each year as the operating program for the Northwest power pool. It is necessary to bring these operating methods over into the planning program if our plans for new projects are to be reasonable and the projects constructed are to become reasonable components of the future power supply system for the Pacific Northwest. The method of analysis of system resources was discussed in section II.

Figure XIII has been prepared as an example to show the importance of the proper assignment of a project to the load curve of the area under specific water conditions. The Chief Joseph project, now under construction on the Columbia River downstream from the Grand Coulee, is used as an example. Ultimately, this project should have a total installation of from 36 to 40 units. The ultimate minimum regulated flow in December and January of an adverse water year may be about 80,000 cubic feet per second. This flow will support only about 15 units operating 24 hours a day. If the streamflow is load-factored for daytime energy operating about 10 hours per day, all 36 units would have dependable capacity. On this basis, the project would have an annual capacity value of $21,700,000 a year, as compared with $8,650,000 a year if operated on base of the load during adverse water conditions.

The Chief Joseph project is, of course, a run-of-river project. The drafting of a storage project decreases the annual value of the project much more drastically. As the reservoir level is dropped, the natural flow of the stream runs through the units operating at a lower net head and hence produces less energy per unit of water. The dependable capacity of the plant decreases with head because less water will flow through a unit at lower net head.

FIGURE XIII


ANNUAL CAPACITY VALUE
2,550,000 KW @ $8.50 = $21,700,000
ANNUAL CAPACITY VALUE
1,020,000 KW @ $8.50 = $8,650,000
LOAD DURATION CURVE OF THE NORTHWEST POWER POOL FOR TYPICAL DECEMBER 1985 SHOWING THE CHIEF JOSEPH PROJECT WITH 36 UNITS OPERATING AS A BASE LOAD PROJECT AND AGAIN LOAD FACTORED FOR MAXIMUM DEPENDABLE CAPACITY TO SERVE SYSTEM REQUIREMENT UNDER ADVERSE STREAM FLOW CONDITIONS
SYSTEM LOAD MILLIONS OF KILOWATTS
50
40
30
20
10
0
0
100
200
300
400
500
600
700
HOURS IN MONTH

In planning generating resources for an electric system, the engineer has continuously in mind a minimum of investment in plant to carry a given load. Resources are assigned to the load curve of the area by system operators with this thought in mind.

On an all-hydro system, cyclical storage is drafted in an adverse water year to supplement system energy. On a system with substantial amounts of both steam- and hydroelectric resources, steam-electric units are run around the clock to supplement system energy and hydroprojects are operated only during the maximum load-hours, so as to conserve water and maintain the maximum dependable capacity of the projects. Daily pondage at each project is used to load-factor the available water. (By load-factoring of water is meant the controlling of daily flows so as to make streamflow energy available during the hours of maximum system load.)

Another way of stating the same thing is that hydroprojects operating in con junction with steam-electric resources are operated for maximum energy and dependable capacity, drafting reservoirs only when it is necessary to do so to preclude spilling of flood flows.

SECTION IV. DEVELOPMENT OF THE MIDDLE AND LOWER SNAKE RIVER BASIN PROJECTS AS REASONABLE COMPONENTS OF A SYSTEM WITH BOTH HYDROELECTRIC AND THERMALELECTRIC GENERATING RESOURCES

General discussion

Complete development of the Snake River Basin must give consideration to the multiple uses of water and the protection of other natural resources of the area. In planning for irrigation, navigation, power, recreation and flood control, preference must be given to beneficial consumptive use of water such as irrigation and domestic and farm requirements.

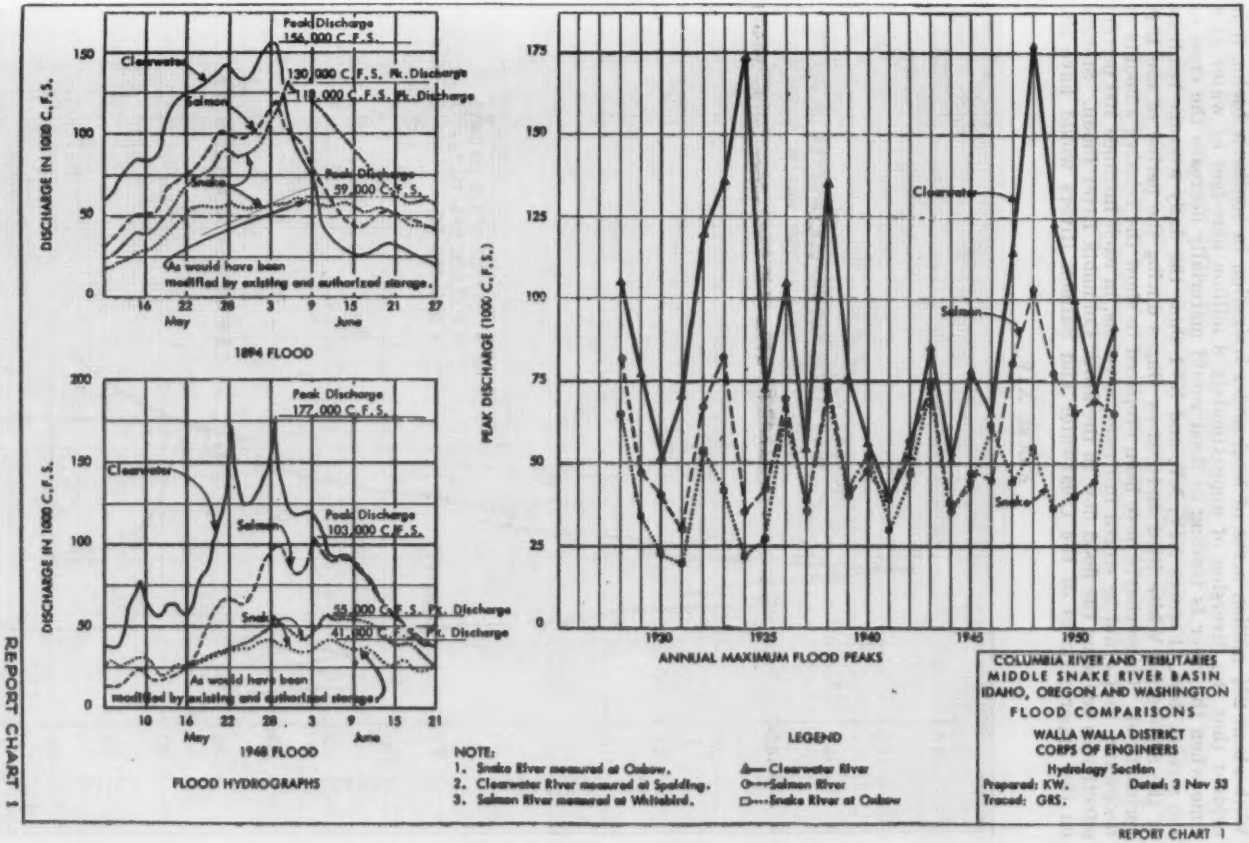
The flows of the main stem of the Snake River and its two principal tributaries, the Salmon and Clearwater Rivers, have extremely diverse seasonal flow characteristics. The Salmon and the Clearwater Rivers have their sources in drainage basins just over a single mountain from the headwaters of the Bitterroot, Clark Fork, and Missouri Rivers. The spring snowmelt flood flows of the Salmon and Clearwater are very similar to the flows of the Coeur d'Alene, Clark Fork, Kootenai, and the main stem of the Columbia.

The main stem of the Snake River rises in Yellowstone National Park, 800 miles south of the principal drainage basin area of the main stem of the Columbia River. The snowmelt floods of the main stem of the Snake River almost always occur in February, March, and April. From a power standpoint, this represents a splendid resource diversity when compared with the flow characteristics of the main stem of the Columbia River which has its lowest flows in the months of January, February and March. These early flood flows of the main stem of the Snake should not be stored for they are needed at the time of their occurence for electric power generation.

The 1948 flood on the Snake River

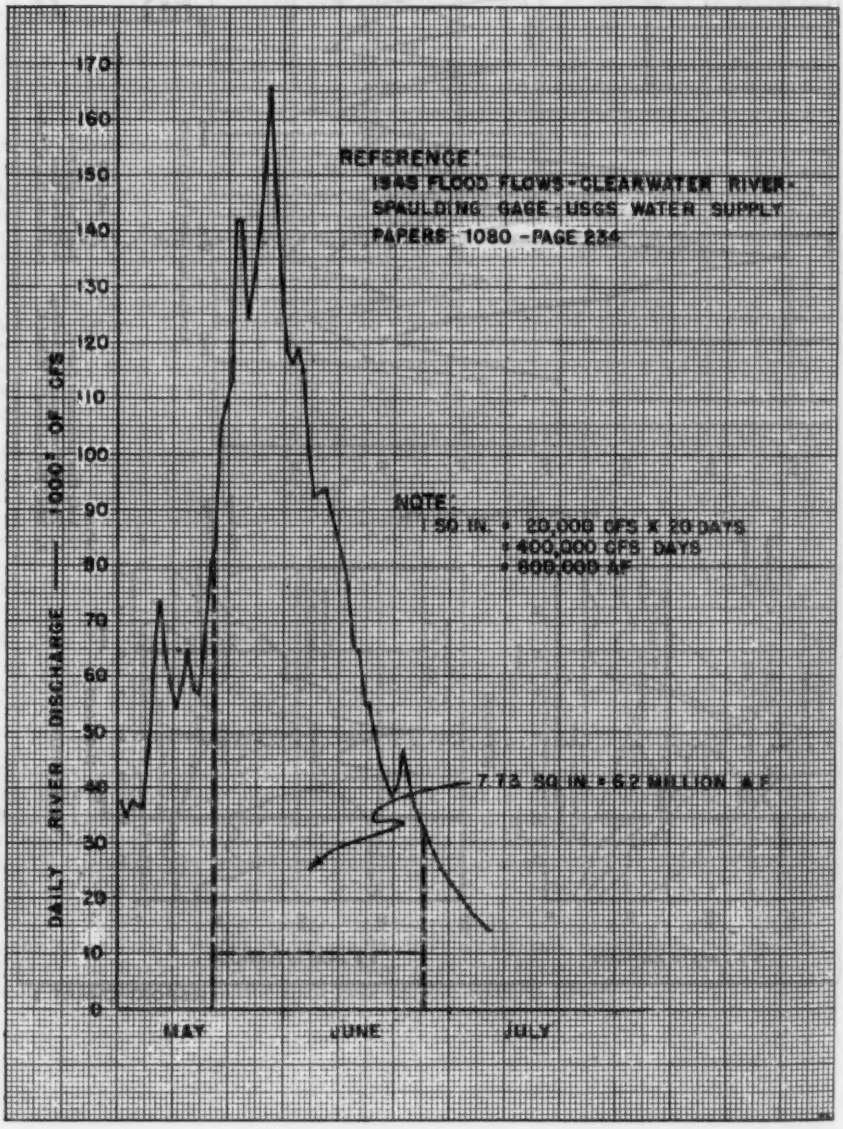
In planning flood control on the Snake River and its principal tributaries, consideration must be given to the effect of diversion for irrigation upon the flood characteristics of the main stem of the Snake River. In the flood of 1894, the flow on the main stem of the Snake River at the Oxbow gage was 130,000 cubic feet per second. The flow of the Spaulding gage on the Clearwater was 158,000 cubic feet per second and at the White Bird gage on the Salmon River was 120,000 cubic feet per second. There was a marked change in the flow characteristics of the main stem of the Snake during the flood of 1948. While the maximum flow at the Spaulding gage on the Clearwater River increased to 177,000 cubic feet per second and the White Bird gage recorded a flow of 103,000 cubic feet per second, the peak flow at the Oxbow gage dropped to only 55,000 cubic feet per second.

Report chart 1 has been copied directly from the review report of the Middle Snake River Basin, dated December 22, 1953, and shows graphically the relative flows of the Snake River at the Oxbow gage, the Spaulding gage on the Clearwater River and the White Bird gage on the Salmon River.


DISCHARGE IN 1000 C.F.S.
Peak Discharge 156,000 C.F.S.
130,000 C.F.S. Pk. Discharge
118,000 C.F.S. Pk. Discharge
Clearwater
Salmon
Snake
Peak Discharge 59,000 C.F.S.
As would have been modified by existing and authorized storage.
May
June
1894 FLOOD
Peak Discharge 177,000 C.F.S.
Peak Discharge 103,000 C.F.S.
55,000 C.F.S. Pk. Discharge
41,000 C.F.S. Pk. Discharge
1948 FLOOD
FLOOD HYDROGRAPHS
PEAK DISCHARGE (1000 C.F.S.)
ANNUAL MAXIMUM FLOOD PEAKS
NOTE:
1. Snake River measured at Oxbow.
2. Clearwater River measured at Spalding.
3. Salmon River measured at Whitebird.
LEGEND
Clearwater River
Salmon River
Snake River at Oxbow
COLUMBIA RIVER AND TRIBUTARIES
MIDDLE SNAKE RIVER BASIN
IDAHO, OREGON AND WASHINGTON
FLOOD COMPARISONS
WALLA WALLA DISTRICT
CORPS OF ENGINEERS
Hydrology Section
Prepared: KW. Dated: 3 Nov 53
Traced: GRS.
REPORT CHART 1

The reason for this can be found largely in the diversion of water for irrigation purposes on the upper reaches of the Snake River in southern Idaho. In an irrigation season, approximately 6 feet of water is diverted for each acre of land irrigated. About half of this amount is diverted in April, May, and June. With about 2¾ million acres of land under irrigation in southern Idaho, it is evident that the diversion of approximately 8 million acre-feet of water at a time when the river is tending to flood would materially decrease the crest of the stream flow. Figures XIV, XV, and XVI show the daily average readings of the Spaulding, White Bird and Oxbow Gages during the period of the 1948 spring flood. These charts have been prepared to show the relative amounts of floodwater that could be stored in these 3 streams, in each instance 100 percent effective in reducing the flood flow in the lower Columbia River Basin. Storage on the upper reaches of the Clearwater and Salmon Rivers would have the

FIGURE XIV



additional benefit of controlling local floods on these two streams. There is little or no local benefit to be gained by flood control of the flows of the Oxbow gage by flood-control storage at Hells Canyon.

Storage in the Snake River Basin for power

In describing the operations of hydroelectric projects as components of a system with both thermal-electric and hydroelectric generating resources, it was pointed out that storage reservoirs were not drafted except to preclude spilling of flood flows of the river. It was further stated that all hydroelectric projects must be operated for maximum energy production. The flows of the Snake River are discussed here with these fundamentals in mind.

FIGURE XV

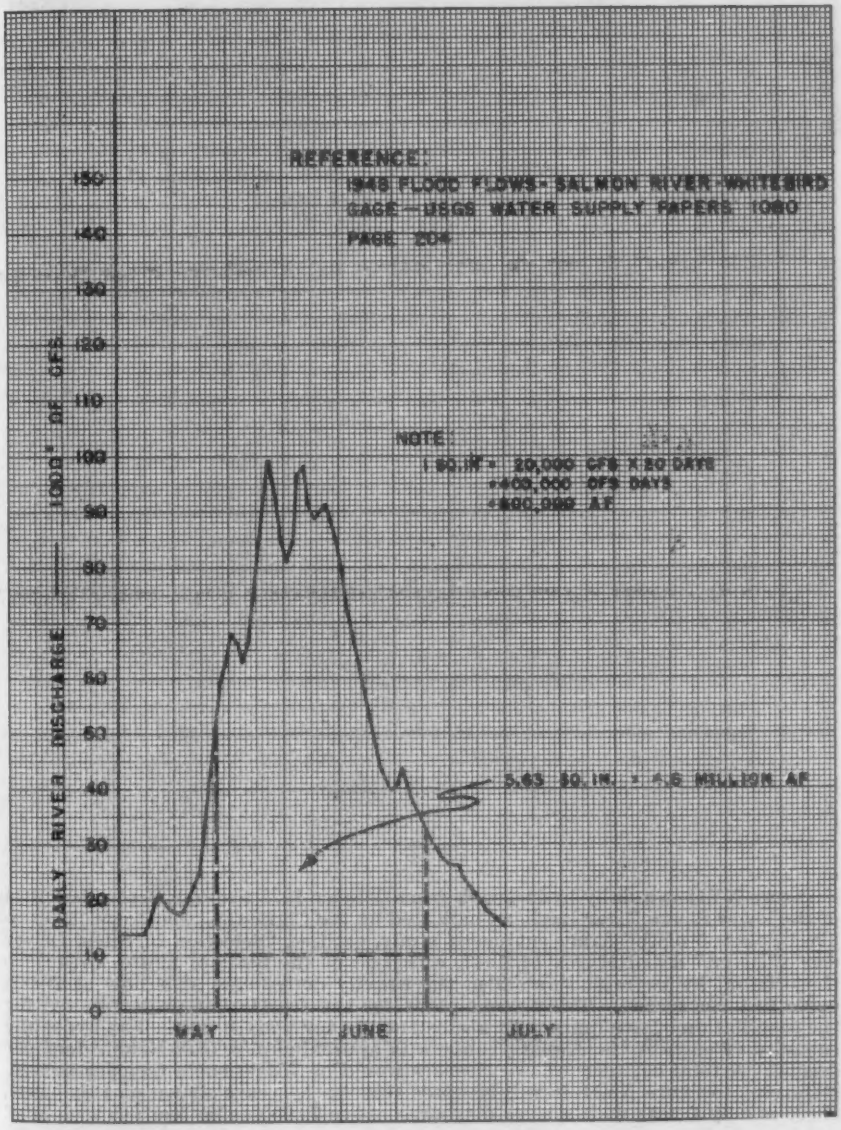


FIGURE XVI

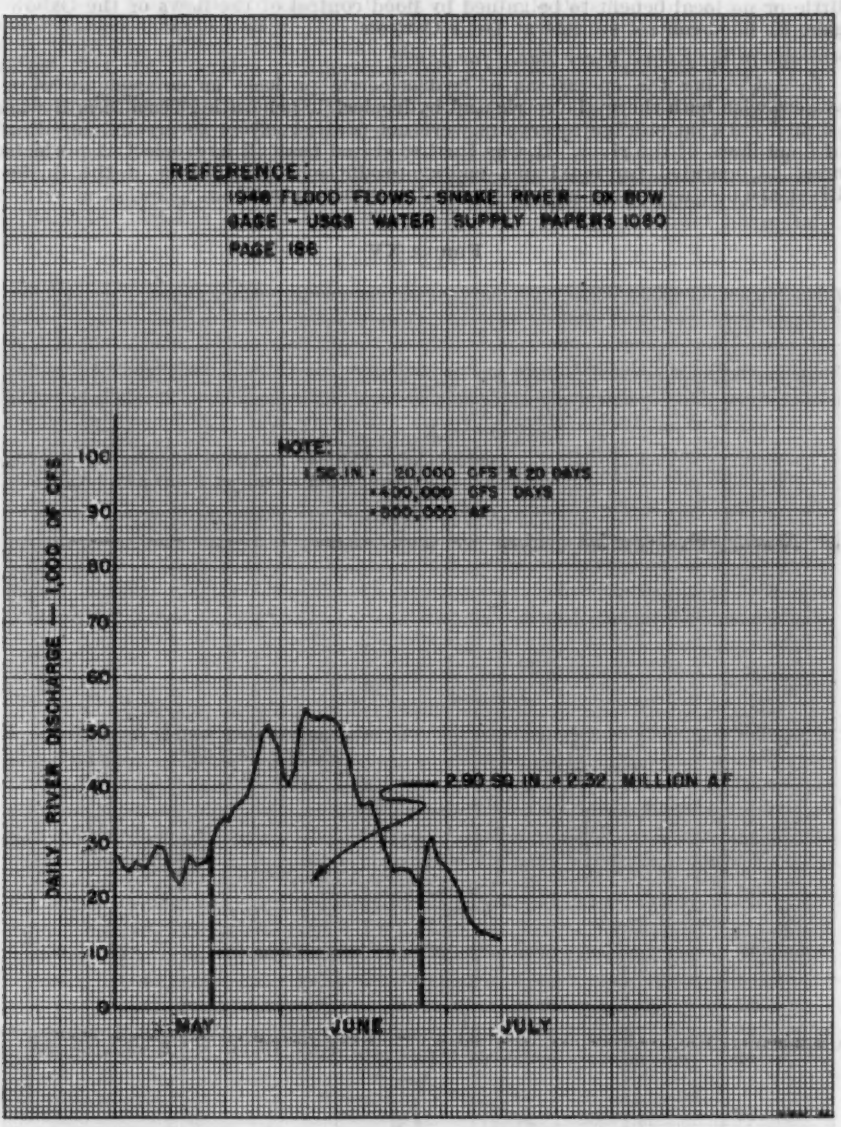


Figure XVII is a daily hydrograph from October 1928 through September 1944 of the lower Snake River Basin as indicated by the Clarkston gage flows. Appendix B, plate 5 of the Army engineers' study, entitled "Selection of Sites, Lower Snake River," dated March 14, 1947, was used as the basis of figure XVII. To the original hydrograph was added the heavily dotted line at a flow of 70,000 cubic feet per second. The present plans for the Ice Harbor project called for the installation of five units with a substructure for a sixth unit. The hydraulic capacity of each of the Kaplan runners is approximately 15,000 cubic feet per second. A total capacity of five runners would be 75,000 cubic feet per second. Referring to figure XVII, it will be noted that in the years shown on this chart, there is only 1 year with a river discharge above 70,000 cubic feet per second of

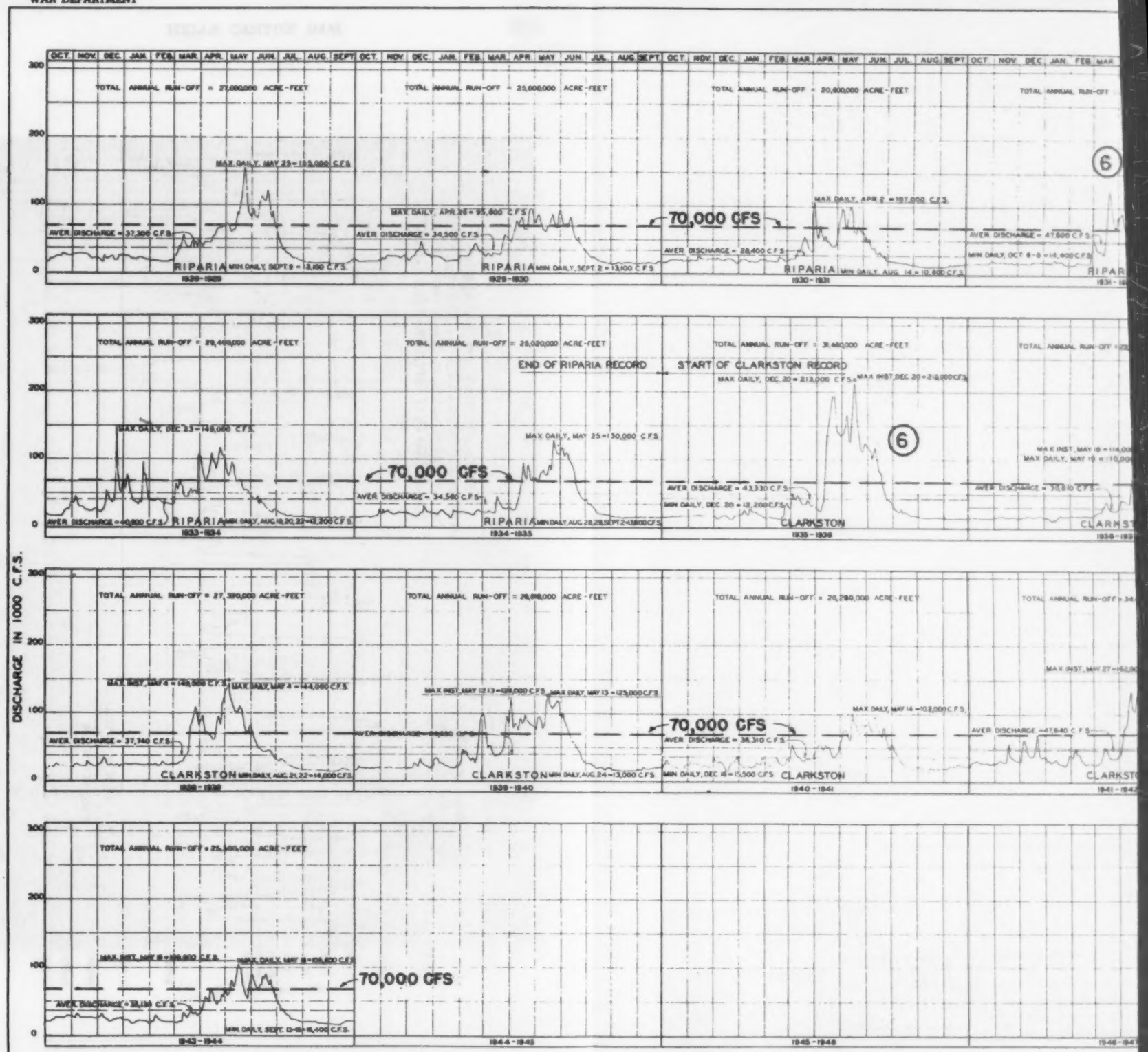
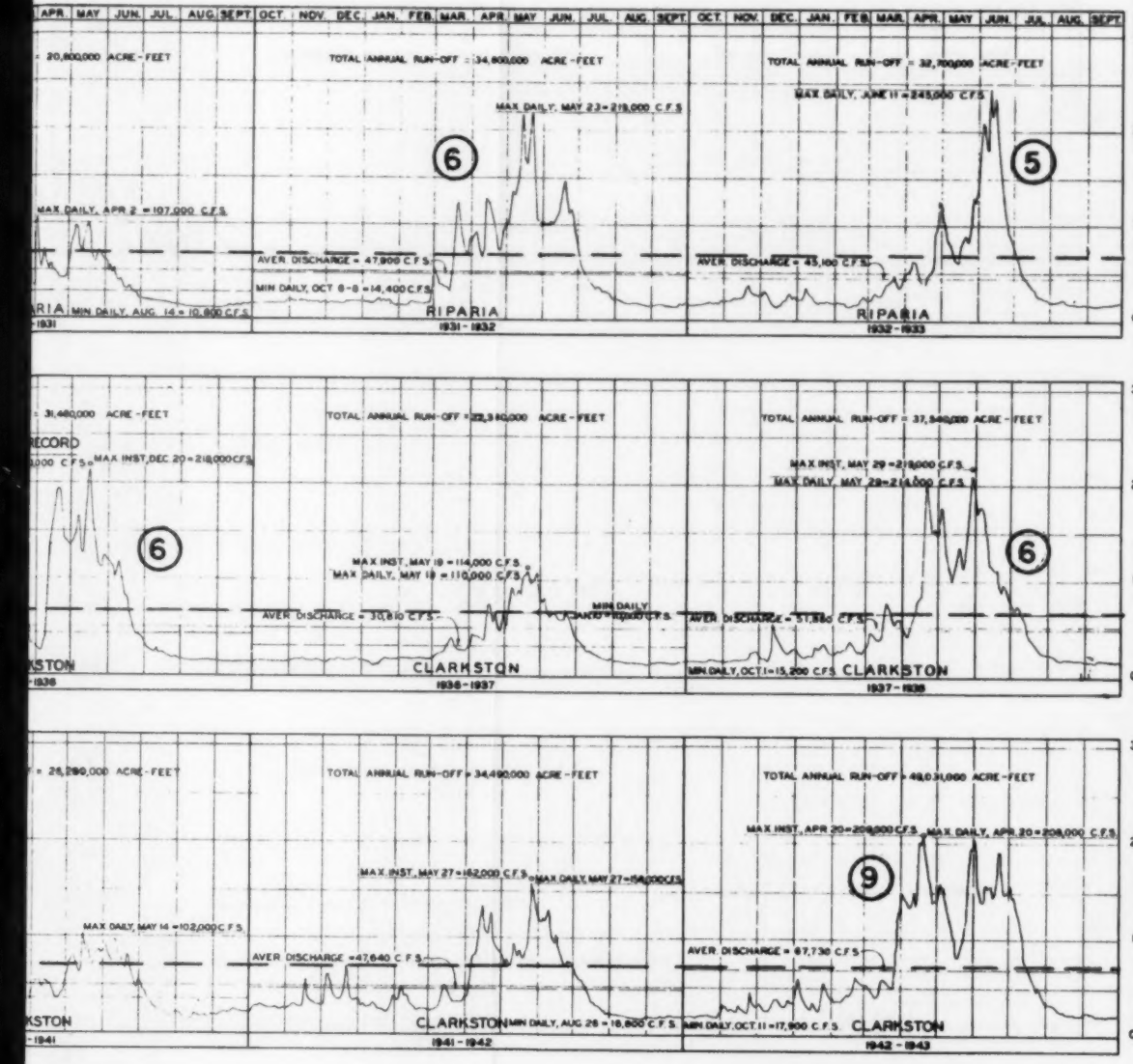
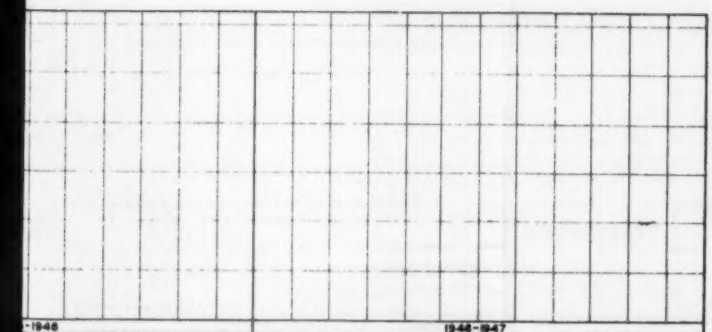

DISCHARGE IN 1000 C.F.S.
OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEPT.
TOTAL ANNUAL RUN-OFF = 27,000,000 ACRE-FEET
MAX DAILY, MAY 23 = 155,000 C.F.S.
AVER DISCHARGE = 37,300 C.F.S.
RIPARIA MIN DAILY, SEPT 9 = 13,100 C.F.S.
1928-1929
TOTAL ANNUAL RUN-OFF = 25,000,000 ACRE-FEET
MAX DAILY, APR 28 = 95,600 C.F.S.
AVER DISCHARGE = 34,500 C.F.S.
RIPARIA MIN DAILY, SEPT 2 = 13,100 C.F.S.
1929-1930
TOTAL ANNUAL RUN-OFF = 20,000,000 ACRE-FEET
70,000 CFS
MAX DAILY, APR 2 = 107,000 C.F.S.
AVER DISCHARGE = 28,400 C.F.S.
RIPARIA MIN DAILY, AUG. 14 = 10,800 C.F.S.
1930-1931
TOTAL ANNUAL RUN-OFF
6
AVER DISCHARGE = 47,800 C.F.S.
MIN DAILY, OCT 8-9 = 14,400 C.F.S.
RIPAR
1931-19
TOTAL ANNUAL RUN-OFF = 29,400,000 ACRE-FEET
MAX DAILY, DEC 25 = 148,000 C.F.S.
AVER DISCHARGE = 40,800 C.F.S.
RIPARIA MIN DAILY, AUG 18,20,22 = 12,200 C.F.S.
1933-1934
TOTAL ANNUAL RUN-OFF = 25,020,000 ACRE-FEET
END OF RIPARIA RECORD
MAX DAILY, MAY 25 = 130,000 C.F.S.
70,000 CFS
AVER DISCHARGE = 34,580 C.F.S.
RIPARIA MIN DAILY, AUG 28,29, SEPT 2 = 13,600 C.F.S.
1934-1935
TOTAL ANNUAL RUN-OFF = 31,460,000 ACRE-FEET
START OF CLARKSTON RECORD
MAX DAILY, DEC. 20 = 213,000 C.F.S.
MAX INST. DEC. 20 = 216,000 C.F.S.
6
AVER DISCHARGE = 43,330 C.F.S.
MIN DAILY, DEC. 20 = 13,200 C.F.S.
CLARKSTON
1935-1936
TOTAL ANNUAL RUN-OFF =
MAX INST. MAY 19 = 114,00
MAX DAILY, MAY 19 = 110,00
AVER DISCHARGE = 38,840 C.F.S.
CLARKST
1936-193
TOTAL ANNUAL RUN-OFF = 27,390,000 ACRE-FEET
MAX INST. MAY 4 = 149,500 C.F.S.
MAX DAILY, MAY 4 = 144,000 C.F.S.
AVER DISCHARGE = 37,740 C.F.S.
CLARKSTON MIN DAILY, AUG. 21,22 = 14,000 C.F.S.
1939-1940
TOTAL ANNUAL RUN-OFF = 28,000,000 ACRE-FEET
MAX INST. MAY 12 13 = 129,000 C.F.S.
MAX DAILY, MAY 13 = 125,000 C.F.S.
AVER DISCHARGE = 38,600 C.F.S.
CLARKSTON MIN DAILY, AUG. 24 = 13,000 C.F.S.
1940-1941
TOTAL ANNUAL RUN-OFF = 26,280,000 ACRE-FEET
70,000 CFS
MAX DAILY, MAY 14 = 102,000 C.F.S.
AVER DISCHARGE = 36,310 C.F.S.
MIN DAILY, DEC 18 = 15,500 C.F.S.
CLARKSTON
1941-1942
TOTAL ANNUAL RUN-OFF = 34
MAX INST. MAY 27 = 152,0
AVER DISCHARGE = 47,640 C.F.S.
CLARKST
1941-1942
TOTAL ANNUAL RUN-OFF = 25,300,000 ACRE-FEET
MAX INST. MAY 18 = 109,800 C.F.S.
MAX DAILY, MAY 18 = 106,600 C.F.S.
70,000 CFS
AVER DISCHARGE = 35,130 C.F.S.
MIN DAILY, SEPT. 13-15 = 15,400 C.F.S.
1943-1944
1944-1945
1945-1946
1946-1947

FIG. XVII


APR. MAY JUN. JUL. AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEPT.
= 20,800,000 ACRE-FEET
MAX DAILY, APR 2 = 107,000 C.F.S.
MIN DAILY, AUG. 14 = 10,800 C.F.S.
1931
TOTAL ANNUAL RUN-OFF = 34,800,000 ACRE-FEET
MAX DAILY, MAY 23 = 219,000 C.F.S.
6
AVER DISCHARGE = 47,900 C.F.S.
MIN DAILY, OCT 8-8 = 14,400 C.F.S.
RIPARIA
1931 - 1932
TOTAL ANNUAL RUN-OFF = 32,700,000 ACRE-FEET
MAX DAILY, JUNE 11 = 245,000 C.F.S.
5
AVER DISCHARGE = 45,100 C.F.S.
RIPARIA
1932 - 1933
300
200
100
0

= 26,290,000 ACRE-FEET
MAX DAILY, MAY 14 = 102,000 C.F.S.
1941
TOTAL ANNUAL RUN-OFF = 34,490,000 ACRE-FEET
MAX INST. MAY 27 = 162,000 C.F.S.
MAX DAILY, MAY 27 = 154,000 C.F.S.
AVER DISCHARGE = 47,640 C.F.S.
CLARKSTON
MIN DAILY, AUG. 28 = 18,800 C.F.S.
1941 - 1942
TOTAL ANNUAL RUN-OFF = 48,031,000 ACRE-FEET
MAX INST. APR 20 = 208,000 C.F.S.
MAX DAILY, APR 20 = 208,000 C.F.S.
9
AVER DISCHARGE = 67,730 C.F.S.
MIN DAILY, OCT. 11 = 17,900 C.F.S.
CLARKSTON
1942 - 1943
300
200
100
0



SNAKE RIVER AT RIPARIA, WASHINGTON
1. DRAINAGE AREA = 104,000 SQ. MILES
2. LOCATED 67.2 RIVER MILES ABOVE MOUTH OF SNAKE RIVER.

SNAKE RIVER NEAR CLARKSTON, WASHINGTON
1. DRAINAGE AREA = 103,300 SQ. MILES
2. LOCATED 132 RIVER MILES ABOVE MOUTH OF SNAKE RIVER

TO ACCOMPANY SPECIAL REPORT, SELECTION OF SITES, DATED MAR. 14, 1947

LOWER SNAKE RIVER
OREGON, WASHINGTON AND IDAHO

DAILY HYDROGRAPH
SNAKE RIVER AT RIPARIA & CLARKSTON

SCALES AS SHOWN

U. S. ENGINEER OFFICE, PORTLAND, OREGON, DISTRICT

SUPERVISED: Mark C. Tyler, DIST. ENGINEER
APPROVED: Walter M. Tucker, Col., Corps of Engineers, District Engineer
SUBMITTED: Oliver Glenn, U.S. Corps of Engineers
RECOMMENDED: [illegible]
DRAWN BY: [illegible] DATE: 1946-48
TRACED BY: [illegible] CHECKED BY: [illegible]

REVISED FOR SPECIAL SITE SELECTION REPORT

FIG. XVII

SP-20-1/11 APPENDIX-B PLATE 5

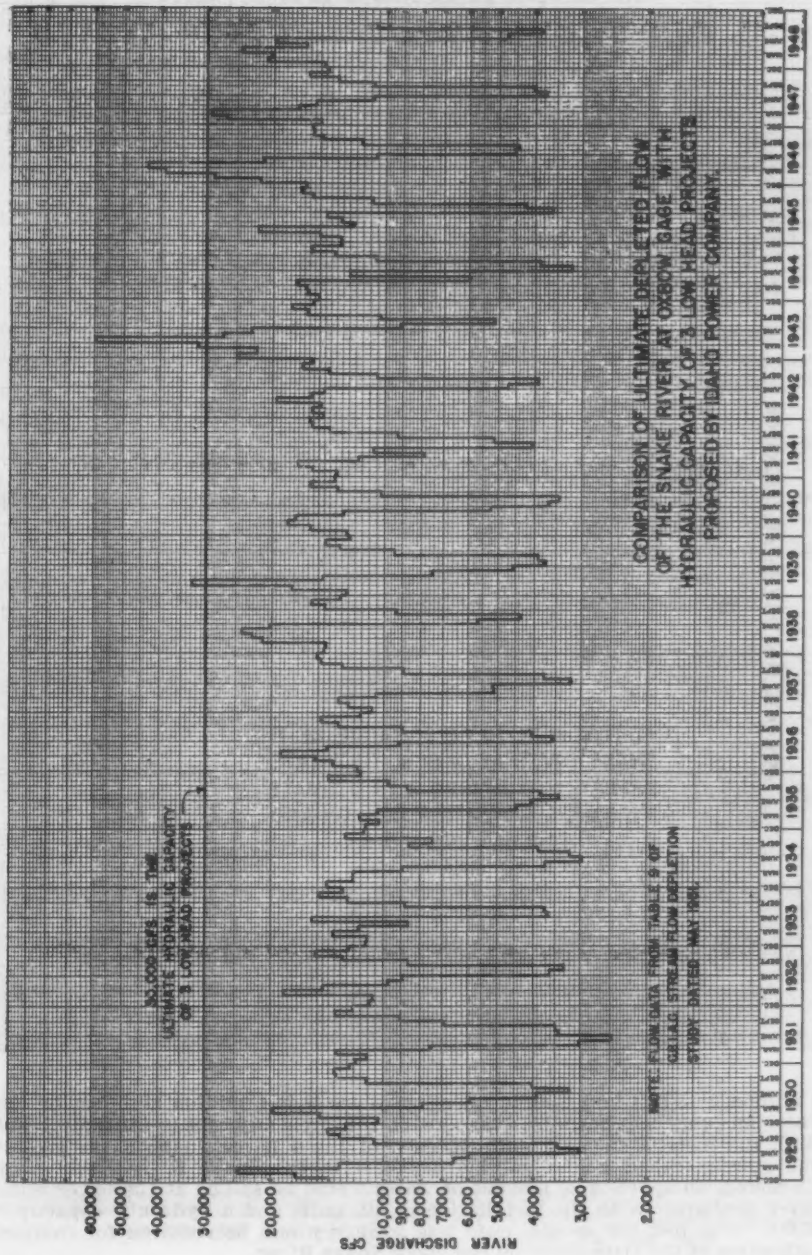
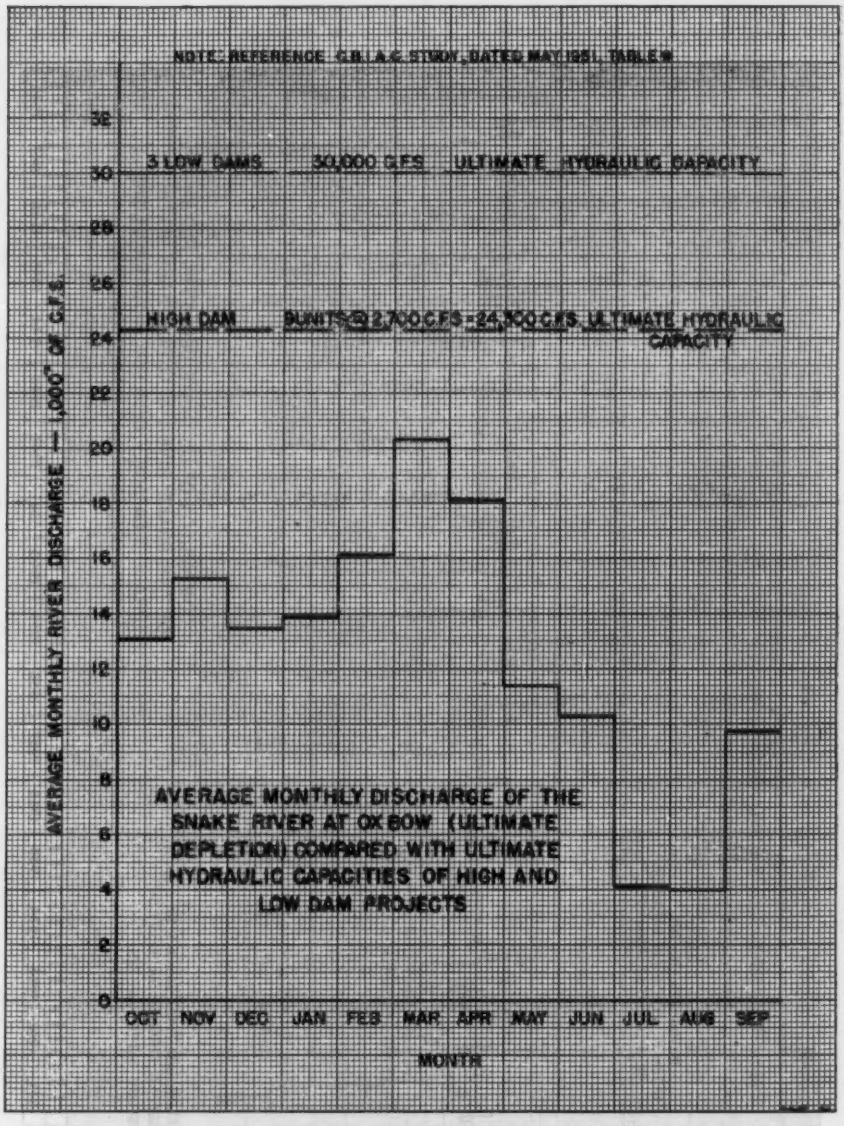


FIGURE XVIII

FIGURE XIX


NOTE: REFERENCE C.B. A.C. STUDY, DATED MAY 1951, TABLE 9
3 LOW DAMS 30,000 C.F.S. ULTIMATE HYDRAULIC CAPACITY
HIGH DAM 9 UNITS @ 2,700 C.F.S. = 24,300 C.F.S. ULTIMATE HYDRAULIC CAPACITY
AVERAGE MONTHLY RIVER DISCHARGE — 1,000's OF C.F.S.
AVERAGE MONTHLY DISCHARGE OF THE SNAKE RIVER AT OX BOW (ULTIMATE DEPLETION) COMPARED WITH ULTIMATE HYDRAULIC CAPACITIES OF HIGH AND LOW DAM PROJECTS
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP
MONTH

9 million acre-feet and that in all other years it is 6 million acre-feet or less. These amounts are shown by a numeral in the circle adjacent to the hydrograph. With the installation of 5 units in each of the 4 lower Snake River projects and storage capacity of 6 million acre-feet in the Snake River Basin above Clarkston, no appreciable amount of water would be spilled at the lower Snake River projects. With the installation of six units and a hydraulic capacity of 90,000 cubic feet per second, even less storage would be required for complete utilization of the streamflow on the lower Snake River.

Figure XVIII shows a comparison between the ultimate depleted flow of the Snake River at the Oxbow gage as given in table 9 of the CBIAC streamflow depletion study, dated May 1951 and the ultimate hydraulic capacities of the three low-head projects proposed by the Idaho Power Co. as shown in the

FIGURE XX

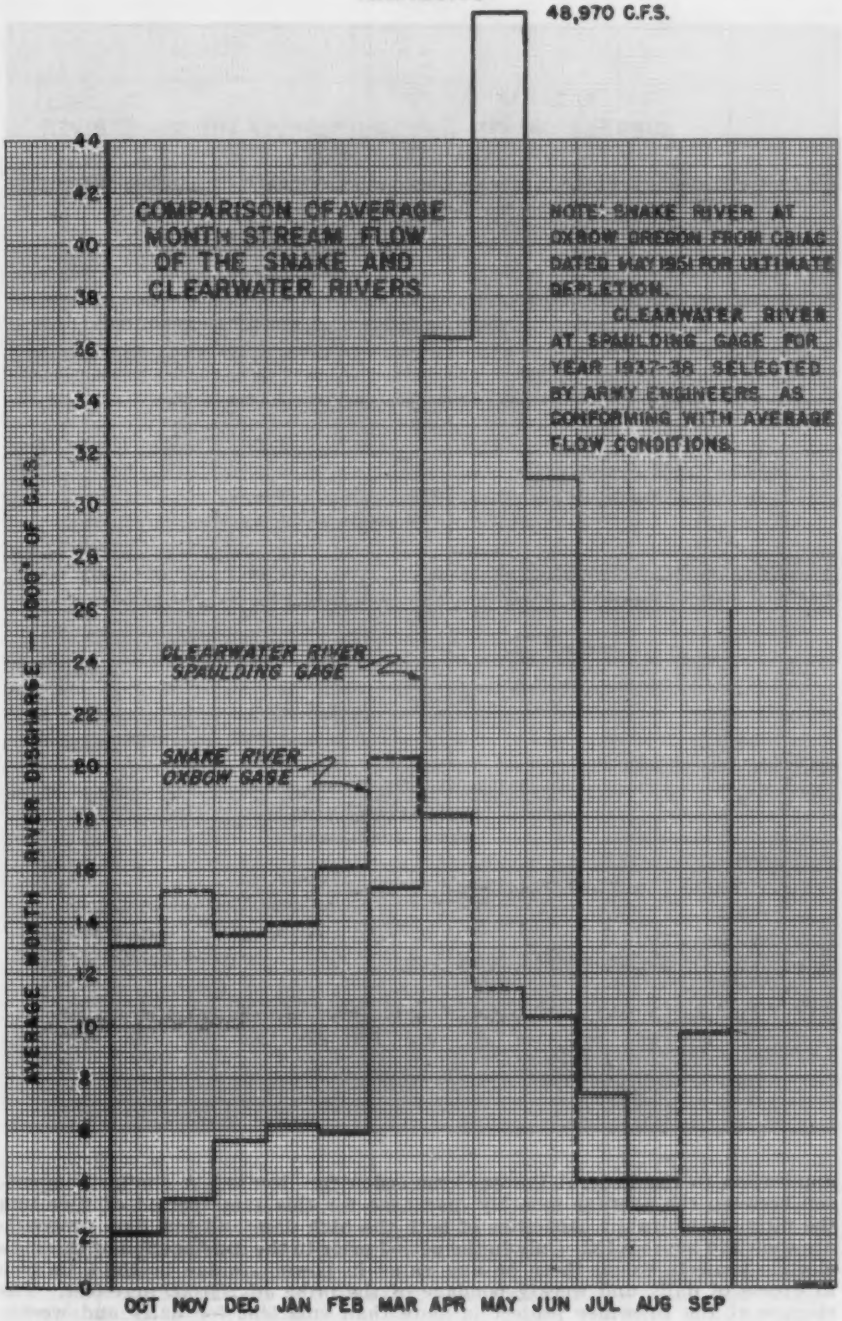
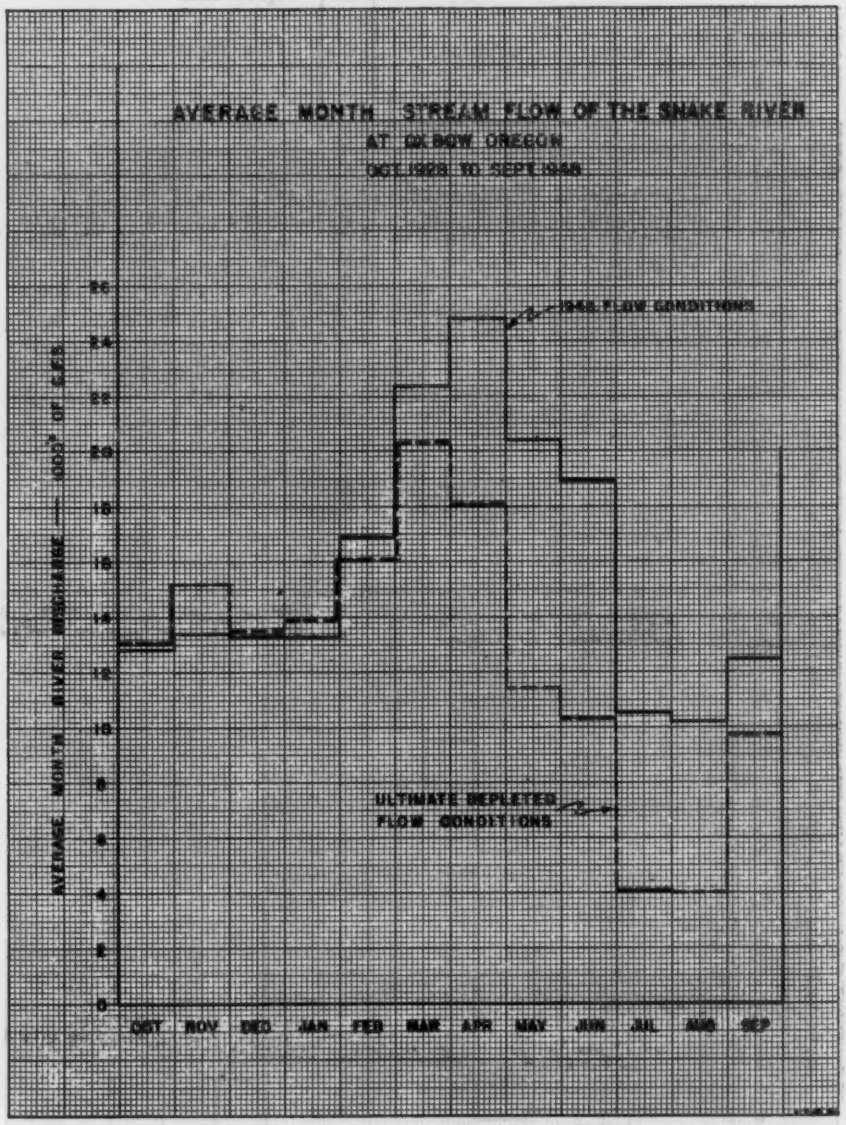

48,970 C.F.S.
COMPARISON OF AVERAGE MONTH STREAM FLOW OF THE SNAKE AND CLEARWATER RIVERS
NOTE: SNAKE RIVER AT OXBOW OREGON FROM GRAG DATED MAY 1951 FOR ULTIMATE DEPLETION.
CLEARWATER RIVER AT SPAULDING GAGE FOR YEAR 1937-38 SELECTED BY ARMY ENGINEERS AS CONFORMING WITH AVERAGE FLOW CONDITIONS.
CLEARWATER RIVER SPAULDING GAGE
SNAKE RIVER OXBOW GAGE
AVERAGE STREAM DISCHARGE IN THOUSANDS OF C.F.S.
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
44
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP

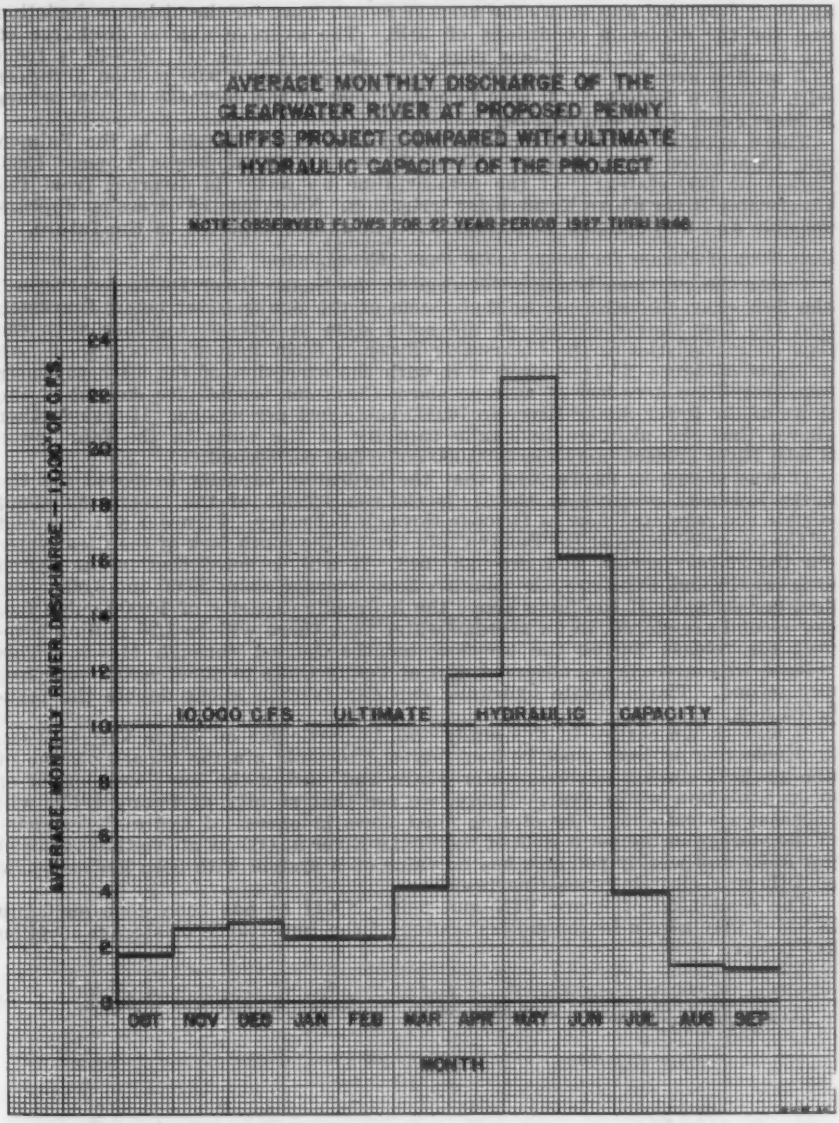
FIGURE XXI



application to the Federal Power Commission for license. A similar comparison between the average monthly discharge for this same period of time and the ultimate hydraulic capacities of both the high dam and low dam proposals are shown in figure XIX. Only in the period prior to the construction of thermal-electric projects would there be any value in power storage in Hells Canyon in excess of daily and weekly pondage of the order of 250,000 acre-feet. The storage at the Brownlee project is more than sufficient for daily and weekly pondage.

As previously stated, on a system with both thermal and hydroelectric generating resources, it is important to locate storage so as to store snowmelt floods that would otherwise be wasted over the spillways of the various hydroelectric projects on the river. Figure XX shows a comparison between the ultimate

FIGURE XXII



depleted flow of the Snake River at the Oxbow gage and the Clearwater River at the Spaulding gage. The differences in the flow characteristics are quite startling and would seem almost unrealistic until it is realized that the flow characteristics of the Snake River are those of a well-regulated stream with about 8.5 million acre-feet of upstream storage and diversion of a like amount each year during the months of April, May, and June for irrigation purposes. In contrast to this pattern of a well-regulated stream, we have the flow characteristics of the Clearwater River at Spaulding gage. The flood flows of April, May, and June at the Spaulding gage are the result of the melting of the winter's snow pack on the rocky slopes of the Bitterroot Mountains with little forest cover or opportunity for percolation. There is definite need for storage for power on both the Salmon and Clearwater Rivers. Storage on these two tributaries would give complete control of the flows of the lower Snake River.

The effect of diversion for irrigation in blunting the snowmelt flood flows is well shown in figure XXI. This chart was prepared from the CBIAC depletion study of May 1951 and shows the average month flows for the ultimate depletion and for the depletion conditions of 1948. The average annual discharge of the Snake River at the Oxbow gage over the 20-year period 1928–48 is from 11.5 million acre-feet at the 1948 level of depletion and 9.09 million acre-feet with ultimate depletion. It will be noted most of the decrease in flow occurs in May, June, July, and August.

There appears to be little possibility of irrigation diversion in the Salmon and Clearwater River Basins. House Document 531, appendix I, page 1569, paragraph 650 states: "At the present time no water is diverted from the Clearwater River above Kamiah for irrigation. No extensive diversion appears feasible and no depletion in the observed flows are expected in the future.

Locations of storage for power in the Snake River Basin

Under the previous heading "Storage in the Snake River Basin for Power," the flow characteristics of the main stem of the Snake River below Clarkston and the flow characteristics of the main stem at Oxbow, together with the flow characteristics of the Clearwater River at Spaulding, were described. An analysis of figure XVII showed that with the exception of the 1942–43 water year, 6 million acre-feet of storage above Clarkston would give control of the flows of the lower Snake River to 70,000 cubic feet per second. It was further shown that the ultimate hydraulic capacity of the units in the four lower Snake River projects may reach 90,000 cubic feet per second.

It was shown in figure XIX that the hydraulic capacity proposed for the three low-head projects in the Hells Canyon stretch of the river was about double the regulated flow of October through February. Figure XXII is a plot of the observed flows at the Penny Cliffs site on the south fork of the Clearwater for the 22-year period 1927 through 1948. It will be noted that in the period October through February, the monthly flows average about 2,000 and 3,000 cubic feet per second. If the flows above the hydraulic capacity of 10,000 cubic feet per second are stored, in an average water year there will be 1.26 million acre-feet for release during the low-flow months August through March. This release will increase the observed flow at Penny Cliffs to about 4,800 cubic feet per second. The ultimate hydraulic capacity is then about double the regulated flow.

It was shown earlier in this study and, in particular on figure VII, how the hydroelectric projects must be load-factored to maintain the capacity value of the projects during adverse water years and during the low-flow months of even a median water year. Hence, we see that storage at Penny Cliffs will increase system energy by storing flood flows in excess of hydraulic capacity while storage in the main stem of the Snake River at Oxbow above that required for daily and weekly pondage has no value on a system with both hydroelectric and thermal-electric generating resources.

The combining of figure XIX and figure XXII as has been done on figure XXII–1 may give a better understanding of the importance of storage location for power.

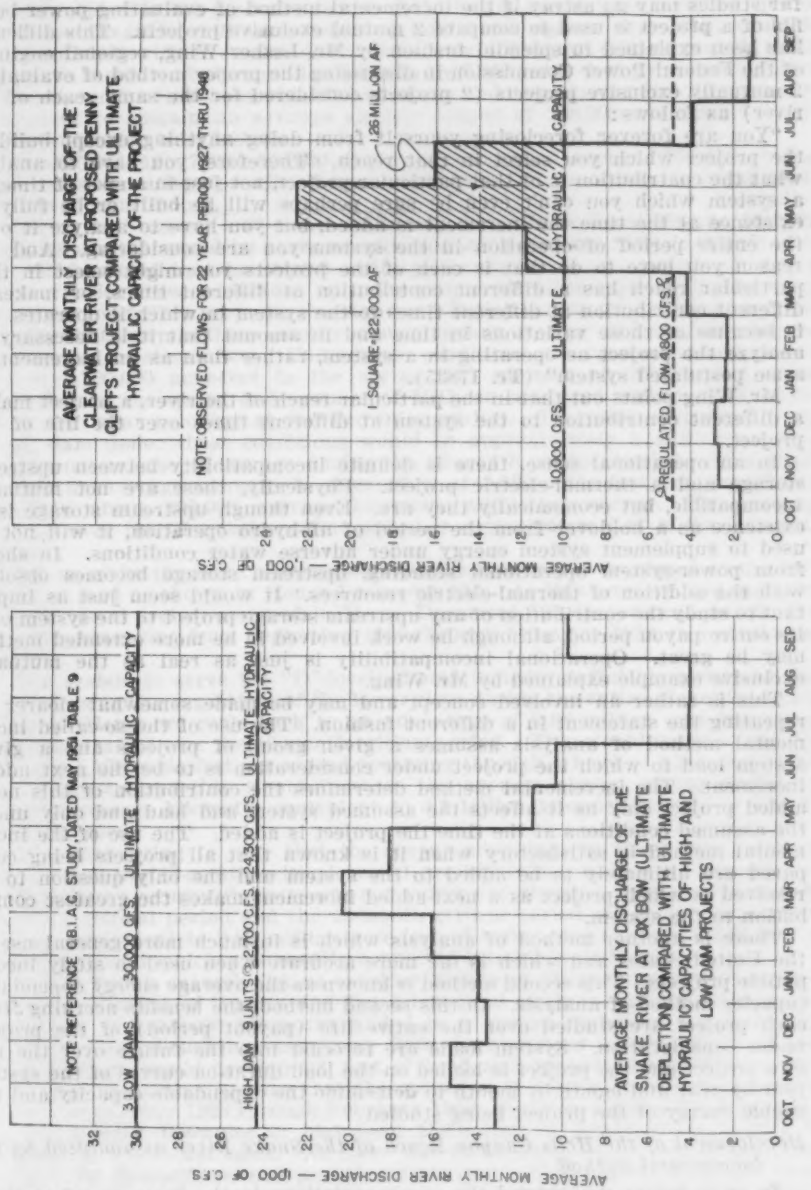

AVERAGE MONTHLY DISCHARGE OF THE CLEARWATER RIVER AT PROPOSED PENNY CLIFFS PROJECT COMPARED WITH ULTIMATE HYDRAULIC CAPACITY OF THE PROJECT
NOTE OBSERVED FLOWS FOR 22 YEAR PERIOD 1927 THRU 1948
1.26 MILLION AF
1-SQUARE=122,000 AF
10,000 CFS ULTIMATE HYDRAULIC CAPACITY
REGULATED FLOW 4,800 CFS
AVERAGE MONTHLY RIVER DISCHARGE — 1,000 CFS
OCT NOV DEC JAN FEB MAR APR MAY JUN JUL AUG SEP
AVERAGE MONTHLY DISCHARGE OF THE SNAKE RIVER AT OX BOW (ULTIMATE DEPLETION COMPARED WITH ULTIMATE HYDRAULIC CAPACITIES OF HIGH AND LOW DAM PROJECTS
NOTE REFERENCE C.B.I.A.C. STUDY, DATED MAY 1951, TABLE 9
3 LOW DAMS 30,000 CFS ULTIMATE HYDRAULIC CAPACITY
HIGH DAM 9 UNITS @ 2,700 CFS = 24,300 CFS ULTIMATE HYDRAULIC CAPACITY
AVERAGE MONTHLY RIVER DISCHARGE — 1,000 CFS

FIGURE XXII-1

Compatibility of projects

Much of the controversy relative to the 2 methods of developing the Hells Canyon stretch of the Snake River (except the political controversy) arises from the original assumptions of House Document 531 with respect to the development of the Columbia River Basin and a lack of understanding of how far studies may go astray if the incremental method of evaluating power benefits of a project is used to compare 2 mutual exclusive projects. This difficulty has been explained in splendid fashion by Mr. Lesher Wing, regional engineer of the Federal Power Commission in discussing the proper method of evaluating 2 mutually exclusive projects (2 projects considered for the same reach of the river) as follows:

"You are forever foreclosing yourself from doing anything except building the project which you select in that reach. Therefore, you have to analyze what the contribution is of that particular project, not just in a spot of time, to a system which you can't even be sure perhaps will be built or be fully in existence at the time the increment is added, but you have to analyze it over the entire period of operation in the system you are considering. And the reason you have to do that is each of the projects you might select in that particular reach has a different contribution at different times, or makes a different contribution at different times to the system in which it operates. It is because of those variations in time and in amount that it is necessary to analyze the project as operating in a system, rather than as an increment to some postulated system" (Tr. 17835).

Mr. Wing points out that in the particular reach of the river, a project makes a different contribution to the system at different times over the life of the project.

In an operational sense, there is definite incompatibility between upstream storage and a thermal-electric project. Physically, these are not mutually incompatible, but economically they are. Even though upstream storage is in existence as a holdover from the period of all-hydro operation, it will not be used to supplement system energy under adverse water conditions. In short, from power-system operational standing, upstream storage becomes obsolete with the addition of thermal-electric resources. It would seem just as important to study the contribution of any upstream storage project to the system over its entire payou period, although he work involved in he more extended method may be great. Operational incompatibility is just as real as the mutually exclusive example explained by Mr. Wing.

This is rather an involved concept and may be made somewhat clearer by repeating the statement in a different fashion. The use of the so-called incremental method of analysis assumes a given group of projects and a given system load to which the project under consideration is to be the next added increment. The incremental method determines the contribution of this next-added project only as it affects the assumed system and load and only under the assumed conditions at the time the project is added. The use of the incremental method is satisfactory when it is known that all projects being compared are ultimately to be added to the system and the only question to be resolved is which project as a next-added increment makes the greatest contribution to the system.

There is another method of analysis which is in much more general use in the United States and which is far more accurate when used to study incompatible projects. This second method is known as the average energy dependable capacity method of analysis. In this second method, the benefits accruing from each project are studied over the entire life (payout period) of the project under consideration. System loads are forecast into the future over the life of a project and the project is loaded on the load duration curves of the system year by year and month by month to determine the dependable capacity and the usable energy of the project being studied.

Development of the Hells Canyon Reach of the Snake River as analyzed by the incremental method

So as to better understand the many variations in the incremental method, it seems desirable to apply the incremental method of analysis and make the high-head Hells Canyon project the next added increment at four different stages of system development. In each instance, the benefit shown will be the difference in the benefits derived from 3,880,000 acre-feet of storage in the high-head Hells Canyon project and the 3 low-head projects with the 1 million acre-

feet of storage. In each instance, it will be assumed that there are 692 feet of head developed at 8 downstream projects, 4 on the lower Snake River and 4 on the main stem of the Columbia below the mouth of the Snake River.

Let us first consider high-head Hells Canyon next added to the system before the C level of development is reached. Referring to figure XI, Hells Canyon, if next added to the present storage of the basin, would have a critical period of 6 months; 2.88 million acre-feet of additional storage over what could be accomplished with Brownlee distribution over a 6-month critical period, would increase the flow at-site and downstream by 7,900 cubic feet per second. Operating through a total head of 1,242 feet at-site and downstream, this flow would be sufficient to sustain an average electric output of 708,000 average kilowatts. The calculation is as follows:

$P=0.72\times1242\times7900=708{,}000$ average kilowatts of energy; 708,000 average kilowatts operating for 4,380 hours (equivalent to 6 months) is equal to 3.1 billion kilowatt-hours.

Let us next assume a 23-month critical period. Referring to Figure XXI, the critical months would be parts of each year from August 1929 to March 1932. It will be noted that in these 3 water years there are two periods of surplus flow. Under these conditions with the proper installed capacity in the downstream run-of-river projects, the high-head Hells Canyon project could be practically shut down in these months of surplus flow, storing all but 2,000 cubic feet per second of streamflow. Under these conditions, the reservoir could recover about 2,700,000 acre-feet in the spring and summer of 1930 and 1,400,000 acre-feet in the spring and summer of 1931, as compared with 1 million acre-feet each year recovery at the Brownlee project. The total advantage of the high dam under these conditions would be approximately 5 million acre-feet additional release of storage during the 23-month critical period. This would create an average increase in streamflow of 3,560 cubic feet per second, and produce about 320,000 average kilowatts additional energy. This average energy over the 23-month critical period is equivalent to 5.37 billion kilowatt-hours.

Let us make the third assumption that the system has developed to the "D"-level of load as shown in House Document 531. At this level of load and with the "D"-level system assumed in House Document 531, the critical period of 42 months, extending from September 1928 through February 1932, is a continuous period.

The system to serve the "D"-level of load includes sufficient storage so that there is complete regulation of the lower river during the entire 42-month critical period. Hence we come back to an advantage of 2.88 million acre-feet which must be drafted over the 42-month critical period. This would increase the flow by only 1,128 cubic feet per second operating through a head of 1,242 feet at-site and downstream; this would increase the average energy of the system by 101,000 average kilowatts equivalent to 3.1 billion kilowatt-hours over the 42-month period.

It is interesting to note that the energy advantage in the 6-month critical period and the 42-month critical period are identical. It is most important to realize that average kilowatts are not power but energy. In short, during the 6-month critical period and the 42-month critical period, we have the potential energy equivalent to 2.88 million acre-feet of water stored above 1,242 feet of developed head which was readily converted into kilowatt-hours.

As the fourth example, let us consider high-head Hells Canyon with an ultimate installation of 9 units and the 3 low-head projects with an ultimate installation of 1,300,000 kilowatts, added to a system including a considerable block of thermal-electric generation. Both the high-head project and the 3 low-head projects would develop 602 feet of head and operate as run-of-river projects. Let us further assume that the operation is during the 42-month critical period, September 1928 through February 1932. Since we have a block of steam on the system, Brownlee or high-head Hells Canyon reservoir would only be drafted on a forecast basis. As there was no excessive snow pack at any time during the 42-month critical period, neither reservoir would be drafted. Table III shows the average monthly flows under conditions of the 1948 level of irrigation depletion for each month during the critical period September 1928 through February 1932. Both projects would operate with reservoirs full and produce exactly the same kilowatt-hours. The 3 low-head projects would have a dependable capacity on the load curve of 1,300,000 kilowatts. The high-head project with only 900,000 kilowatts installed, would have a dependable capacity

of 900,000 kilowatts. Using the value of dependable capacity and energy as given in section II of this report, we find the annual value of power from the 3 low-head projects to be $26.2 million. The corresponding figure for the high-head dam, based upon a capacity value of 900,000 kilowatts, is $22.8 million.

In the Restudy of the Middle Snake River Basin, the Army engineers used a cost of steam-electric generation at the load center prepared by the San Francisco regional office of the Federal Power Commission. This value of power is shown in the report in part II, page D–13. Using the short-term formula of the Federal Inter-Agency River Basin Committee, the cost of steam-electric generation constructed with public funds was shown to be $12.29 a kilowatt-year, plus 3.46 mills per kilowatt-hour. This is a two-part rate with capacity and energy components separated.

The at-site cost of the high-head Hells Canyon project for the ultimate of 9 units is $397,800,000. The total cost of the ultimate installation (1,300,000 kilowatts) of the 3 low-head projects is approximately $181 million. Neither of these figures includes the cost of transmission from project to load center. The difference between the plant investment in the 2 cases is sufficient to give 2,880,000 acre-feet of additional storage in the high-head project. The cost of this additional storage is approximately $217 million. The annual cost of the additional storage on the basis of Federal funds is approximately $10,850,000.

We have seen that the release of this storage in a 6-month critical period would produce 708,000 average kilowatts of energy at site and downstream, equivalent in the 6-month critical period to 3.1 billion kilowatt-hours. It must be remembered that storage is potential energy. This potential energy is transformed into electric energy as the water flows through the projects at site and downstream. Actually, the low-flow conditions of the 1936–37 water year are the lowest in history. Hence, for estimating purposes and to be conservative, it is here assumed that such adverse conditions have a recurrence factor of once in 20 years.

TABLE III.—*River discharge, Snake River at Oxbow gage, for critical period September 1928 through February 1932 for 1948 level of irrigation depletion*

	Acre-feet	Cubic feet per second
1928		
September	715	11,920
October	831	13,400
November	940	15,650
December	795	12,850
1929		
January	849	13,700
February	1,023	18,250
March	1,580	25,000
April	1,096	18,300
May	1,004	16,200
June	911	15,200
July	508	9,680
August	634	10,200
September	772	12,900
October	752	12,100
November	722	12,000
December	763	12,300
1930		
January	631	10,200
February	921	16,500
March	1,304	21,000
April	829	13,800
May	913	14,700
June	674	11,250
1930—Continued		
July	596	9,610
August	686	11,100
September	814	13,600
October	773	12,500
November	680	11,300
December	741	12,000
1931		
January	724	11,700
February	615	11,000
March	867	14,000
April	772	12,900
May	676	10,900
June	540	9,000
July	584	9,440
August	631	10,200
September	694	11,550
October	649	10,450
November	706	11,750
December	740	11,900
1932		
January	667	10,750
February	596	10,650
March	1,247	20,100

NOTE.—Average flow, September 1928 through February 1932, 12,950 cubic feet per second.
Reference: Report on Snake River streamflow depletion—CBIAC, dated May 1951—Table 9 (present development modified runoff).

No direct comparison can be made in terms of a steam-electric project which is equivalent to additional upstream storage. Upstream storage has energy value only and no capacity value. If we were discussing the value of the 2.88 million acre-feet of additional storage in the high-head Hells Canyon Reservoir as compared with additional hours of operation of existing thermal-electric projects, we would have a reasonable comparison. As previously stated, the annual cost of the additional reservoir capacity is about $10,850,000 and once in 20 years it produces a net of 2.89 billion kilowatt-hours at load center, or 144 million kilowatt-hours each year of the 20-year period. This additional energy at 3.46 mills per kilowatt-hour has an annual cost of $500,000.

There are those who would install additional units in existing downstream plants in an amount equal to the energy released from the storage reservoirs, load factored to 75 percent and they take as the cost of this additional increment at the downstream plant the cost of substructure, unit, switch gear, and transmission. This, of course, is not an accurate method for water released from an upstream storage reservoir must be stored and load factored in passing each downstream project to assure that the energy is usable under the load curve.

A steam-electric project can be installed to produce the equivalent energy released from the additional storage at Hells Canyon. It would have a capacity of approximately 660,00 kilowatts at load center and would operate once in 20 years for a 6-month period to produce 2.89 billion kilowatt-hours. This is an average of 144 million kilowatt-hours a year or 214 kilowatt-hours per kilowatt per year. This steam plant, evaluated at $12.29 per kilowatt-year plus 3.46 mills per kilowatt-hour, would have an annual cost of $13.03 per kilowatt-year, or a total annual cost of $8,600,000. This, of course, is not comparable to the upstream storage reservoir because we have added 660,000 kilowatts of load carrying ability to the system and could carry that much greater total load. In spite of this, we find that the annual cost of furnishing the additional system energy requirement in the adverse water year was $8,600,000 as compared with $10,850,000 additional annual carrying charges on the additional cost of the high-head project.

These last statements should not be interpreted to mean that steam-electric generation to supplement system energy in adverse water years should entirely take the place of upstream storage. It simply means that $75.40 an acre-foot is too much to pay for upstream storage. At the Hungry Horse project, the cost of the entire project, including dam and powerhouse, was only about $33 per acre-foot.

In short, municipalities such as the city of Seattle or the city of Tacoma could build steam-electric generation at the load center cheaper than the incremental cost of this storage, without any allowance for transmission costs to the load center under the most favorable increment that can be chosen in an effort to justify this storage at Hells Canyon. There are those who would argue that high-head Hells Canyon stretch will show better than a 1-to-1 benefit-to-cost ratio. This is not the problem and is not the question to be answered. The question is, Is high-head Hells Canyon storage the most economical source of supplementing system energy at the present time on the system of the Northwest power pool? And the answer is: It is not.

Similar calculations can be made to show that at the C level of development, with a 23-month critical period, steam-electric generation is far more economical than furnishing 320,000 average kilowatts of additional energy from storage over the 23-month period. At the D level of development, the storage project is even less attractive. In the fourth example, that of adding high-head Hells Canyon storage as the next-added increment to a system with both the thermal-electric and hydroelectric generating resources, the value of high-head Hells Canyon storage for power has been shown to be zero. It was further shown that to gain the maximum annual value from the high-head Hells Canyon project, as a component of combined thermal-electric and hydroelectric system, this project must be operated as a run-of-river plant.

The 6-month critical period is the condition which exists today. The 23-month critical period will be the period for the C level of load which will be reached by about 1965, and it is probable that large blocks of thermal-electric generation will be constructed in the system of the Northwest power pool by 1970. Hence,

we see that in the short period of the next 15 years the four different answers, except possibly the D-level condition as described above, will apply at some time or other to the "next added" increment of Hells Canyon. Since the midpoint of the economic life of a project which becomes a new start within the next year or two will be about 1985, it would seem reasonable to use the average energy dependable capacity method of evaluating any storage project to be added to the Pacific Northwest system in the future.

Furthermore, existing plants should be analyzed on this same basis to determine whether provision has been made for the proper ultimate number of units so that minimum streamflow can be load factored to make each project a reasonable component of a system with both thermal-electric and hydroelectric generating resources.

Operational and economic studies of House Document 473

Senate bill 1333, page 2, line 8, states:

"The Department of Interior, under the supervision and direction of the Secretary of the Interior, hereafter referred to as the Secretary, is authorized and diected to construct substantially in accordance with the physical plans set out in the reports referred to hereafter as (a) the Hells Canyon Dam as described in volume II, House Document 473, 81st Congress, and as modified by the report of the Commission of Reclamation, approved by the Secretary on May 11, 1951; * * *."

Let us see what the Senators are instructing the Secretary of Interior to build and the cost of the project. The plans for this dam are shown on drawings 550–D–1 and 550–D–2, following page 180 of House Document 473. These plans call for a dam 742 feet high, 647 feet thick at the base, and 1,740 feet long, requiring 6.5 million cubic yards of concrete. Normal reservoir level is 2,077 feet and tailwater elevation 1,475 feet, with gross operating head of 602 feet. It is proposed to draft the reservoir under adverse water conditions 289 feet, leaving an operating head at minimum reservoir level of 313 feet. The initial power installation is proposed as 8 units and an ultimate installation of 9 units.

Table IV was copied from the penciled worksheets of the Bonneville Power Administration, dated December 18, 1950, and is 1 year of operation of a 21-year study. The operations shown are for the water year 1936–37.

With a plant installation of eight 100,000-kilowatt units, this study shows the plant loaded 24 hours a day from September 1, 1936, through January 1937 at full rated output; and in February and March at full gate capacity and the sluice gates open. The operations in the month of March have a very peculiar appearance. With an average head of 313 feet, a total regulated flow of 22,760 second-feet is shown for the month. Figure XXIII shows design curves for a standard vertical Francis turbine rated 140,000 horsepower, 550-foot head, similar to what would be a standard installation for this project. Operating at full gate and 313 feet of head, the hydraulic capacity is 1,750 cubic feet per second per unit, giving the 8 units a total hydraulic capacity of 14,000 cubic feet per second. The only way 22,700 cubic feet per second could pass the dam under these conditions would be to open the sluice gates and allow 8,760 cubic feet per second to flow down the river. This apparently was what was done, and the downstream benefits of the water through the sluice gates were included in the power calculations. Of course, this could be overcome in part by installing oversize runners, but this would mean a decrease in efficiency under normal operating conditions. Under the operating conditions shown in this study, the output of standard runner units would be 316,000 kilowatts, or 39.5 percent of normal plant rating with 8 units installed.

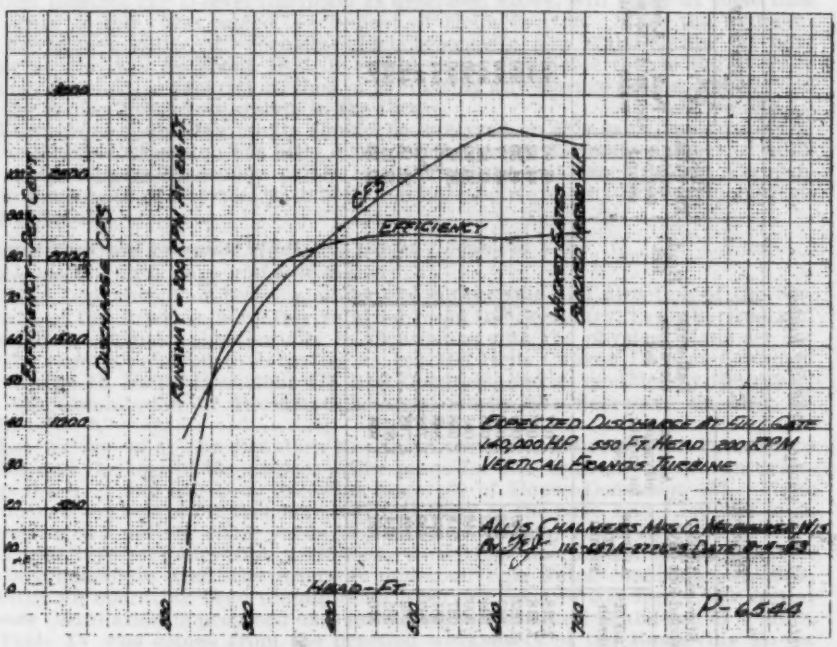
TABLE IV.—*Hells Canyon—Phase C–2 system, 21-year study, 1936–37 hydro*

	Modified flow, cubic feet per second	Regulated flow, cubic feet per second	Flow released		Reservoir			Tail-water elevation, feet	Head, feet	H/K kilowatts: cubic feet per second	Capability	
			Cubic feet per second	1,000 second-foot days	Storage, 1,000 second-foot days		Average elevation for month, feet				Peak, thousand watts	Average, thousand watts
					End of month	Average for month						
July	9,980	1,500	−8,480	−263	2,218	----	2,077	----	----	43.95	800	56
August	10,990	10,990	----	----	2,218	----	2,077	----	----	44.82	800	493
September	12,870	18,060	5,190	156	2,062	2,140	2,065	----	----	44.30	800	800
October	12,300	18,530	6,230	193	1,869	1,966	2,050	----	----	43.17	800	800
November	13,290	19,110	5,820	175	1,694	1,782	2,035	----	----	41.87	800	800
December	10,470	20,000	9,530	295	1,399	1,546	2,005	----	----	39.99	800	800
January	10,040	21,730	11,690	362	1,037	1,218	1,958	----	----	36.81	800	800
February	11,710	29,060	17,350	486	551	794	1,868	----	----	FG	644	704
March	13,440	22,760	9,320	289	262	409	1,788	----	----	FG	441	496
April	14,270	14,270	----	----	262	262	1,788	----	----	21.18	441	302
May	12,420	2,640	−9,780	−303	565	414	1,871	----	----	25.01	563	66
June	12,540	2,160	−10,380	−311	876	720	1,934	----	----	30.53	748	66

NOTE.—Critical period, Sept. 1 to Apr. 15.

Source: Copied from pencil worksheet of BPA branch of power resources dated Dec. 18, 1950.

FIGURE XXIII



Referring to table IV and the storage in the reservoir at the end of June 1937, there are 876,000 second-foot days in the reservoir equivalent to 1,752,000 acre-feet. This is a recovery at the end of the flood-flow season of only one-third of the storage which had been drafted. It would be entirely impossible to refill this reservoir. Actually, the study showed that the reservoir was not filled until the end of June 1938. This means that from September 1936 until June 1938, this project operated at reduced head, wasting energy that might otherwise be produced. This type of operation is excusable in an emergency in a system without thermal-electric generation. It certainly bears no relation to the actual operation of the project after about 1965 or 1970.

The financial operation study, table 9, shown on page 198 of House Document 473, is subject to the same criticism. Th firm energy sales as shown in column 3 average over the 55-year period 3.15 billion kilowatt-hours per year. It would appear that this table has been calculated using a 10-year low-flow period in determining the energy value of this project. The actual energy production, operating at 602 feet of head, without draft or storage, and using the ultimate depleted flow as shown in the Columbia Basin Inter-Agency Committee study of May 1951, would give an average annual energy production of 4.75 billion kilowatt-hours, which is nearly 51 percent greater than the energy shown in table 9. Column 5 of table 9 shows downstream benefits of approximately $7 million a year throughout the pay-out period. These have been determined by using the incremental method and evaluating nominal prime power at downstream projects. This, of course, is not a reasonable method of evaluating even on an all-hydro system.

It is most interesting to note that the final answer as shown in column 6 of the "operating revenues" for this project are a little low in terms of the actual value of this project as a component of a combined thermal-electric and hydroelectric system. The following tabulation shows a comparison between the 3-dam project

ultimate installation and the high-head Hells Canyon project, assuming 4 more units than are called for in House Document 473:

TABLE V

	Single-dam project (13 units)	3-dam project (ultimate)
Total plant investment	$454,600,000	$181,000,000
Dependable capacity	1,300,000	1,300,000
Average annual generation (billions of kilowatt-hours)	4.75	4.75
Dependable capacity value ($8.35 per kilowatt-year)	$10,850,000	$10,850,000
Energy value (3.39 mills per kilowatt-hour)	15,900,000	15,900,000
Total annual value of project	$26,750,000	$26,750,000
Annual cost on public fund basis at 5.2 percent of investment	$23,600,000	$9,400,000
Benefit-to-cost ratio	1.13	2.84
Excess of annual value over annual cost	$3,150,000	$17,350,000
Cost per kilowatt-hour of average annual energy (mills)	4.95	1.98

The ultimate plan of nine units is insufficient to allow streamflow to be load-factored sufficiently with the high-dam project operating as a component of a combined hydrothermal system. The addition of the 4 units to the single-dam project increases the dependable capacity from 900,000 to 1,300,000 kilowatts. The annual energy production remains unchanged at 4.75 billion kilowatt-hours.

It will be noted that the cost per kilowatt-hour for the single-dam project is 2½ times the cost per kilowatt-hour for the 3 low dams, figuring both projects on a public-fund basis. Actually, private enterprise can develop this project and pay 7 percent of plant more taxes and cost of money and have a total annual cost $2 million less than the proposed Federal project, with all its advantages in cost of money and taxes.

The problem of Canadian storage

On May 9, 1955, the Honorable Jean Lesage, Minister of Northern Affairs and National Resources of the Canadian Government, from Ottawa, spoke before the Pacific Northwest Trade Association in Vancouver, British Columbia.

Mr. Lesage stated: "In our country, the doctrine of sharing downstream benefits is in the process of becoming the explicit policy of the Government of Canada which is directly concerned with this problem." Again quoting Mr. Lesage: "The problem of downstream benefits is probably the one requiring our most immediate and careful consideration. I am inclined to think that the discussion of this issue "has been conducted in too broad terms up to now to be really fruitful." Quoting again: "It seems to me that all parties concerned should make known in the near future whether or not they accept the principles of sharing downstream benefits. As far as we are concerned in Canada, I have attempted to make our position clear on this. If there is general agreement on the principle itself, then we will have to discuss how it should be applied. Perhaps it will be possible to work out a general formula that could be applied in each case involving downstream benefits." The complete text of Mr. Lesage's speech is included in appendix A, attached hereto.

A recent report to the Puget Sound Utilities Council, prepared by Jack D. Stevens and dated March 1955, states that the downstream benefit of 10.5 million acre-feet of storage at the Mica Creek project in Canada is 1,790,000 kilowatts. The determination of these downstream benefits has been made on the incremental basis assuming the Mica Creek project "next added" after completion of all proposed downstream projects between Grand Coulee and Bonneville.

The calculations and the pay-out schedule of House Document 473 are based on exactly the same method as employed by Mr. Stevens in his report to the Puget Sound Utilities Council. The American Section of the International Joint Commission must deal with Canada relative to the storage in Mica Creek and the Libby project in the State of Montana. It puts the Chairman of the

American Section in a rather embarrassing position in dealing with the Dominion Government to have 30 United States Senators advocating the use of the incremental method in determining the value of the Hells Canyon project.

APPENDIX A

WATER-RESOURCE DEVELOPMENT IN THE PACIFIC NORTHWEST

Address by the Honorable Jean Lesage, Minister of Northern Affairs and National Resources, before the Pacific Northwest Trade Association, Vancouver, British Columbia, May 9, 1955

Water-resource development has been studied on several occasions by the Pacific Northwest Trade Association. Indeed it was the theme of its general conference held at Spokane in 1953. Nevertheless, I have chosen to discuss it again before you because this question has never been of greater importance and of more immediate concern to all of us than it is today.

The Pacific Northwest has an important common feature: its economic development largely depends upon water resources and the Columbia River system is its main source of water. However, this vast region is far from being homogeneous. It is composed of several political units separated by an international boundary whose political and economic significance cannot be ignored. The region is constituted of several distinct areas which differ both in geography and in natural resources. The distinction between upstream and downstream areas, for instance, corresponds to a basic economic reality.

Up to now, these differences have not generated any substantial diversity of interests within the region. The various areas of the Pacific Northwest have grown along parallel lines, more or less independently of each other. They were in a position to exploit their respective resources and to attract new industries through their own initiative because their energy requirements could be met by developing available heads in the Columbia River system to provide on-site power. This first phase of development did not call for joint enterprise nor create a conflict of interests, with the result that the different parts of the Pacific Northwest appeared unified through complementary relationships.

As the region approaches the end of its first stage of development, it becomes evident that the unity of interest is more apparent than real. As it moves into the second period of its expansion a new situation will arise where interregional relationships are likely to show two contradictory features. First, they will have competitive aspects. All areas depend more or less directly on water resources for their future industrial growth. However, the region's potential of cheap power, although still abundant, is limited in quantity so that the additional amounts appropriated by one area will affect the character, and perhaps will limit, the further economic expansion of the others. Thus, conflicting interests are likely to develop among the various areas because they will be obliged to share the same scarce commodity. Second, interregional relations will also have complementary features. Only part of the power potential of the Columbia River system can be developed through a series of dams using the available at-site head because there is a great difference between summer and winter flows. The optimum development of the basin will necessitate the construction of upstream storage facilities to provide downstream power and to keep costs low. Thus, joint action by upstream and downstream areas will in many cases be required to develop the power potential of the region economically.

This complex set of relationships is further complicated by the physical possibility of diverting floodwaters from the Kootenay River into the Columbia through Canal Flats and from the Columbia River into the Fraser River system. Canada's right to make these diversions is guaranteed under the Boundary Waters Treaty of 1909.

Article II of this treaty deals with this problem in the following terms: "Each of the high contracting parties reserves to itself or to the several State governments on the one side and the Dominion or Provincial governments on the other as the case may be, subject to any treaty provisions now existing with respect thereto, the exclusive jurisdiction and control over the use and diversion, whether temporary or permanent, of all waters on its own side of the line which in their natural channels would flow across the boundary or into boundary waters." The article goes on to give to any parties on the other side of the boundary who may be injured as a result of a diversion the same rights to claim damages as if the injury had been sustained in the country making the diversion. The right to object to diversions resulting in material injury to navigation interests is embodied in the treaty.

It is necessary to recall the historical background of this article to understand its significance. In Canada, the law regulating the use of water originated from the riparian doctrine. According to that principle, a downstream interest has the right "to have the water come to him forever, undiminished and undefiled." When the treaty was negotiated, Canada advocated the application of that doctrine. Sir Wilfrid Laurier stated his position as follows: "The same principle should prevail in international law as prevails in the common law and the civil law; namely, that a man may make such use as he pleases of the water which flows over his property so long as he does not do so to the detriment of anyone else."

In the United States however a different doctrine had come to be applied. It had originated at the time of the Roman Empire and was generally recognized by the Mediterranian countries. It was brought to America by the Spanish and spread from Mexico to California and later to the whole country. It is known as the law of appropriation. Under it a person on the banks of a stream has the right to consume or to divert the water for a beneficial purpose. No purpose downstream has any vested right to receive the water unless he has established an earlier appropriation of it himself. This was the doctrine which, before the treaty, had been applied by the United States against Canada on two different occasions—the diversion of the Allagash River at Chamberlain Lake in Maine into the Penobscot and the proposed diversion of the St. Mary River in Montana. It was also applied against Mexico in the Rio Grande diversion. The United States Attorney General, Mr. Harmon, wrote to the Secretary of State in this connection explicitly rejecting the contention that there could be any limitation on the right of an upstream State to divert unappropriated water. Canada has been urging the contrary view, along the lines of the common-law doctrine. However, Mr. Harmon said: "* * * what is really contended for is a servitude which makes the lower country dominant and subjects the upper country to the burden of arresting its development and denying to its inhabitants the use of a provision which nature has supplied entirely within its own territory * * * In my opinion, the rules, principles, and precedents of international law impose no liability or obligation upon the United States."

This background explains why Mr. Elihu Root, the then Secretary of State, and the other United States negotiators insisted on incorporating the appropriation doctrine in the 1909 treaty and to have a provision such as article II. To prevent a deadlock, our country reluctantly accepted the United States views. Sir Wilfrid Laurier, the then Prime Minister of Canada, defined the Canadian attitude as follows:

"But in this case, whether we like it or did not like it, the United States had taken the position that international law provides that, except in matters of navigation, the upper power has right to use the water within its own territory as it thinks best. What were we to do? They might do so, and if they did so, they might do it to our injury and we had no recourse whatever. Was it not wiser, then, under such circumstances, to say: Very well, if you insist upon that interpretation you will agree to the proposition that if you use your powers in that way you shall be liable to damages to the party who suffers. At the same time we shall have the same power on our side, and if we chose to divert a stream that flows into your territory you shall have no right to complain, you shall not call upon us not to do what you do yourselves, the law shall be mutual for both parties and both parties shall be liable to damages."

Thus, our right to divert floodwaters from the Kootenay and Columbia Rivers is clearly established as a result of the position taken by the United States in 1909. Now that, in the main area of contention, Canada represents the upstream interests, we cannot be criticized for wanting to assert a right which was more or less imposed upon us in conditions that were then against our national interests.

However, the fact that those diversions are physically feasible and that we have the right to make them does not of itself necessarily mean that they will be initiated. Economic considerations will have to be taken into account in reaching a decision. That is why an investigation is now being made on the feasiblity of the Kootenay and Columbia diversion projects. Results of these surveys are expected within a year.

We want to obtain precise data on the benefits to be derived from these diversions and on their cost, including, of course, the possible damages to downstream interests. Once we know the quantity and the cost of power which could thus be made available, it will be useful to compare those data with the cost of thermal and atomic power. It will be particularly important to make such a

comparison with the quantity and the cost of power that the downstream interests would be prepared to give in recompense for storage facilities if the floodwaters were not diverted. All the direct and indirect effects of these alternatives will have to be carefully examined before a final decision is reached.

This brings us back to the competitive and complementary relationships existing between upstream and downstream areas in the Pacific Northwest region and raises the complex problem of downstream benefits. Given the strong competitive factors now opposing the two main groups of interests, it is quite understandable that the downstream areas would like to keep for themselves all the downstream power made available through regulated flow and to provide compensation only in terms of money for the damage caused by the upstream storage facilities. It is equally understandable that the upstream areas should refuse such proposals because even adequate compensation for damages does not add to their wealth. They may argue, for instance, that, once the head has been developed, the generation and transmission of power derived from on-peak storage cost very little because otherwise the facilities of the power system downstream would be idle and because unused capacity in a hydroelectric plant does not materially reduce total cost whereas the cost of providing storage may be considerable. They could claim, therefore, that most of the downstream power generated from the released storage should belong to them.

It is evident that these opposite views must be reconciled in order to reach a satisfactory arrangement. Some compromise will have to be worked out whereby the upstream areas will receive an adequate and fair share of downstream power. I am convinced that this claim of the upstream interests is perfectly justified. It should be noted that the power made available under those particular conditions is a joint product resulting from the joint enterprise of upstream and downstream interests. The downstream areas provide the head which is certainly a valuable resource, but the upstream areas contribute the storage sites which are required to regulate the flow of water and also may permit flooding above the boundary to increase the head below. It cannot be denied that a topography favorable to storage sites is a very valuable asset which can be utilized in perpetuity. It follows therefore that when downstream and upstream areas decide to use their respective physical assets jointly for the generation of power, they both have a claim on the end product. Moreover, they both make their contribution in physical terms—even though some expenditures are involved to develop the natural resources—so that they are both entitled to a quantity of the joint product in physical terms.

The claim that downstream benefits should be shared rests on the simple fact that both water and head are required to produce hydro power. It is not a new doctrine invoked only in Canada. It has been propounded for a long time and it has been applied in several cases. The principle of sharing downstream benefits was asserted for the first time before the International Joint Commission by the United States in 1925, when the Canadian application for authority to build a dam at Grand Falls on the St. John River in New Brunswick was considered. In this case, it is true, the flooding caused by the dam was to take place in boundary waters but whether storage is provided in boundary waters or in a river flowing across the boundary does not affect the validity of the principle.

Mr. Green H. Hackworth, now president of the Court of International Justice, acted as counsel for the State Department and presented the views of the United States on the Grand Falls project. In the course of his argumentation, he made several references to the principle of sharing downstream benefits and requested its application to this case. The following quotation illustrates his line of argument: "Instead of building a dam on the international section you are building it below, but you are using the international section for storage purposes, and since you are doing that, and since you are utilizing the soil of the United States for that purpose, then obviously the United States is entitled to some fruits of that operation."

The sharing of downstream benefits is a recognized principle of international law. In this respect, the following statement made at the Edinburgh conference of the International Law Association in 1954 by Prof. Paul Gieseke, director of the Institute for Water Rights at Bonn University, deserves to be quoted: "Indeed the latter [international treaties] frequently regulate the exploitation of water by stipulating that any water power obtained shall belong, not exclusively to the state on the territory of which the plant producing the power, i. e., exploiting the water, is stiuated, but to each of the states concerned in proportion to the respective gradients the river has in the territory of each state."

In our country, the doctrine of sharing downstream benefits is in the process of becoming the explicit policy of the Government of Canada which is directly

concerned with this problem. According to the Canadian Constitution, works built on rivers in Canada and having an effect outside the country fall under the jurisdiction of Parliament even if they are entirely located in one Province. Up to now, the Government of Canada has felt that it was unnecessary to exercise its jurisdiction and to legislate in this field. Conditions are rapidly changing, however, and, as I pointed out, a second period in the development of the Columbia River system is now starting during which important international problems will arise. Special legislation will be needed to cope with these questions and to provide guiding principles of policy designed for the protection of the public interest of the Canadian people. That is why the Parliament of Canada has been asked to enact bill No. 3, entitled "The International River Improvements Act."

Under this bill, an "international river improvement" means a dam, obstruction, canal, reservoir, or other work the purpose or effect of which is (i) to increase, decrease, or alter the natural flow of an international river, and (ii) to interfere with, alter, or affect the actual or potential use of the international river outside Canada. Such works, unless specifically excepted by regulations or by the act, would require a license from the Government of Canada. The bill would also enable the Governor in Council to make regulations concerning the construction, operation, and maintenance of these works for the purpose of developing and utilizing the water resources of Canada in the national interest.

The Government of Canada has already made known the general principles which would serve to interpret the national interest in this respect. They require that a project must be compatible with present and future needs of the country and with the optimum development of the site and the whole watershed. If no effective use of the water resources can be made in Canada, the improvement executed in Canada to permit downstream utilization in another country must provide for benefits commensurate with the water resources thus made available. Projects involving the storage of water in Canada to regulate the downstream flow must provide for long-term arrangements with the United States or some authority designated on its behalf and for a reasonable share of the downstream power or for a fair return in real terms. If, in order to launch a project in Canada, it is necessary to contract for the sale outside of Canada of a declining proportion of the Canadian share of downstream benefit power, then the sale of that power must be treated as an export of electricity and made subject to similar regulations as those pertaining to the Exportation of Power and Fluids and Importation of Gas Act. I use the expression "declining proportion" to indicate that there is no intention to alienate power permanently.

This attitude of the Government of Canada in respect to downstream benefits and to power development in general cannot be interpreted as a new trend in our thinking. It is merely an application to this particular field of well-established policy. The Canadian Government has always thought that our natural resources should be exploited to the best advantage of our country. This is the position taken in the United States about United States resources, and it is the only responsible position that a government can take. We place special emphasis on energy in view of the fact that it is a strategic factor of industrial expansion in the framework of modern technology. Within the energy field we devote particular attention to water power as one of our most valuable resources. We must put it to its optimum use in Canada. We cannot be expected to make it available outside the country on terms which could hinder our own industrial progress.

Such views are shared by most Canadians. They are, as I have said, also views shared by our friends of the United States. As recently as April 9, the Governor of Idaho, Mr. Smylie, expressed them in a very straightforward way before Senator Neuberger's subcommittee. The Governor said: "In Idaho, we tire of the efforts of outsiders to foist upon us plans of development which have as their primary objective the interest of those outside this State rather than the best interests of Idaho and the Northwest as a whole. First and foremost we desire to retain and develop Idaho resources for Idaho. And we shall insist always that we do with Idaho water what is best for Idaho first."

Some people, realizing that southern British Columbia does not need at the present moment all the onsite power that can be developed and the downstream power that it could claim, may argue that it would be advantageous to let the United States Pacific Northwest have part of this power on a long-term basis at the average price prevailing on that market. This is a tempting proposition because it provides a means of making an immediate profit. It is, however, a proposition with dangerous implications.

It must be realized that British Columbia is still in its early period of expansion and that most of its resources are almost untapped. The United States

Pacific Northwest has reached a much more advanced stage of development. This is not the first time that regions of the two countries show such a difference in timing of development. The Province of Ontario once thought that its power potential was much greater than its needs and that it could make part of it available to the State of New York. Just a few years later it needed that power but could not recover it. It took many years to solve this difficulty. Today, southern Ontario has almost completely developed the full potential of its water resources and its power requirements are still increasing rapidly. Where there was once a surplus of really cheap power, there will, in the immediate future, be an acute shortage.

Even at the present time, the power requirements of certain areas in southern British Columbia are doubling every 7 years. There is no doubt that if British Columbia experiences a normal rate of growth, all its cheap sources of power will be required in the next 2 or 3 decades.

If Canada does not want to see the economic future of its west coast area jeopardized it cannot allow the sale in the United States of onsite or downstream power from British Columbia at a price corresponding to the average cost of power presently available on that market. This power is produced at very low cost because the main projects were built during the depression and part of their cost was assigned to irrigation, flood control, and navigation. The real value of power in the United States Pacific Northwest is represented by the cost of producing additional power from the cheapest source now available in the area. Canada cannot be expected to permit the sale of its power on the United States market at a price much lower than this cost. Is Canada reasonably to be expected to use its own resources in such a way as to encourage new industries to locate on the other side of the boundary where they will have immediate access to the United States market, where they will enjoy tariff protection and get cheap power as well? Our first duty is to use Canadian resources to foster Canadian development. We have always given consideration to the needs of our United States friends, and we always will, but we cannot be expected to do that to our own jeopardy. Since cheap energy is so vital a factor in industrial growth, Canada has for years taken the position that it cannot export power to the United States in perpetuity or even on a long-term basis. If it did that, it would sacrifice one of the most significant factors in its industrial expansion. Canada might find itself without cheap power to process its own raw materials and forced to export those as well. Controlled water is simply electricity in storage. The same principle applies there.

If the application of this policy results in some region having a temporary surplus of power this is no reason to think the policy is wrong. We can be sure the surplus will be only temporary. Moreover, it is not a surplus of power, but a shortage which creates great difficulties and which brings industrial expansion to an end. A temporary surplus of power is the very condition of economic progress in the age of modern technology. Power projects require several years to be completed but the demand for power may rise suddenly. That is why regions enjoying temporary surpluses possess a great economic advantage and must think twice before deciding to part with it.

As it can be readily seen, the further development of the water resources of the Pacific Northwest will no doubt create problems, difficulties, and perhaps conflicts. We might as well face them frankly and realistically. We cannot ignore the fact that even in the Pacific Northwest different areas do not have necessarily the same interests. Instead of refusing to recognize unavoidable divergences of interest we should try our best to reconcile them.

The problem of downstream benefits is probably the one requiring our most immediate and careful consideration. I am inclined to think that the discussion of this issue has been conducted in too broad terms up to now to be really fruitful. Endless discussion, unfortunately, does not generate kilowatts, as Governor Smylie recalled in the presentation to which I referred previously. It seems to me that all parties concerned should make known in the near future whether or not they accept the principle of sharing downstream benefits. As far as we are concerned in Canada, I have attempted to make our position clear on this. If there is general agreement on the principle itself, then we will have to discuss how it should be applied. Perhaps it will be possible to work out a general formula that could be applied to each case involving downstream benefits. If this is found impossible, we should at least try to agree on the factors to be considered and on their relative importance. A specific formula for the allocation of downstream power would then have to be worked out in each case. There is no easy and simple solution to the problem of downstream benefits. It is only through negotiations that we can hope to find a satisfactory compromise. Ex-

pert knowledge and a lot of good will will be required. Fortunately, there is an agency which is very well equipped to undertake this difficult task and to carry it on successfully; that is the International Joint Commission. I understand that the members of the Canadian section of the Commission have already proposed to their colleagues of the United States that a study should be undertaken now on the problem of downstream benefits. I hope that this proposal will be accepted and that such a study will be initiated in the near future. Otherwise, further delays in the development of the water resources of the Pacific Northwest will become inevitable.

The United States and Canada have a long period of peaceful relations. This does not mean we do not have divergences of interests or that, when such differences arise, either country sacrifices its interests to the other. The explanation of our friendly relations lies in the fact that we are always ready to iron out our difficulties through direct negotiations and to reach a compromise in the common interest. Associations like yours have made an important contribution to preserve our tradition of peaceful relations. You believe that there are no irreducible differences and that diverging interests can always be reconciled with good will. That is why the Pacific Northwest Trade Association can play an essential role in the solution of the complex problem raised by the further development of the region's water resources. Only disagreements and uncompromising attitudes can impair the brilliant economic future guaranteed to the Pacific Northwest by its immense natural resources.

Mr. ASPINALL. Mr. Houston, will you take the witness stand, please.

Unless there is objection, the next 30 minutes will be divided equally between the gentlewoman from Idaho and the gentleman from Idaho, the 2 members of the committee controlling their respective 15 minutes. Mr. Budge has the first 15 minutes. Is there any objection?

Mr. BUDGE. I would object to that.

Dr. MILLER. Could they alternate 5 minutes apiece between them?

Mr. ASPINALL. They can yield.

Unless there is an objection, then, the time will be divided as stated, with Mrs. Pfost having the first 15 minutes. She can yield as she sees fit. Mr. Budge likewise can yield as he sees fit.

Hearing no objection, it is so ordered.

The Chair recognizes the gentlewoman from Idaho, Mrs. Pfost.

Mrs. PFOST. Mr. Sloan, do you have any consensus of opinion among the Boise Valley farmers as to whether they would accept an exchange of water rights should your plan be adopted?

Mr. SLOAN. Nothing in a formal way. We have not even attempted to get anything in a formal way because it has only been within the last 3 months that the Bureau has confirmed the feasibility of the plan which I proposed. There has been a committee of Boise Valley water users on which is represented all of the irrigation districts in the valley, and we have been meeting with them from time to time, keeping them informed of this plan. But at no time have we ever tried to get a consensus of everybody's opinion.

Mrs. GREEN. Will my colleague yield?

Mrs. PFOST. Yes.

Mrs. GREEN. Mr. Sloan, have you ever been or are you now a paid consultant to the Idaho Power Co.?

Mr. SLOAN. I am.

Mrs. GREEN. You are at the present time?

Mr. SLOAN. Yes.

Mrs. GREEN. Thank you.

Mr. Parry, Mr. Sharp awhile ago made the statement that the Federal Government had taken away the water rights of the Santa Margarita project in southern California. Is that your opinion?

Mr. PARRY. It is my opinion they are endeavoring to. They have not been successful yet.

Mrs. GREEN. Is it not true at the last session of Congress we passed legislation to authorize the water users in that area to use that water?

Mr. PARRY. It is also true——

Mrs. GREEN. Is not that true that we did pass that legislation?

Mr. PARRY. I should answer your question directly. I am not personally familiar with the exact terms of that legislation.

Mrs. GREEN. Mr. Chairman, I think the record of the last session of Congress will show that.

Mr. PARRY. May I finish my answer, which is, I understand, that the Santa Margarita case, so-called, where the Government priority is being asserted, is still pending in court regardless of——

Mrs. GREEN. There is a possibility of court action, but we do not have any case in the last huundred years as Mr. Sharp said where the Federal Government has taken away the water rights.

Mr. Houston, when you came before the committee yesterday Mr. Budge introduced you as representing the State of Washington. Is that right?

Mr. HOUSTON. Representing the Governor.

Mrs. GREEN. Representing the Governor?

Mr. HOUSTON. That is right. I am his personal consultant.

Mrs. GREEN. As his personal consultant, you were sent down here by the Governor?

Mr. HOUSTON. That is right.

Mrs. GREEN. Then the testimony which you are giving is the testimony which he instructed you to give before this committee; is that right?

Mr. HOUSTON. Which I prepared and he read and O. K.'d to be presented before this committee.

Mrs. GREEN. The reason I ask, I find that in the Federal Power Commission hearings on page 8342 this question was asked you—that is why I wanted to know if you were instructed. The question was asked you: "Can you explain what contributions you made to the work of that subcommittee?" That was the CVIAC technical subcommittee on Hells Canyon. Do you remember that?

Mr. HOUSTON. Yes.

Mrs. GREEN. And the quotation of your answer was:

> I did my best not to make any contribution to that committee. It was just a pumping deal on the part of the Department of the Interior to find out, if they could, what data we expected to present to the Federal Power Commission hearing at Washington, D. C. So I asked all the foolish questions I could think of and kept my mouth shut otherwise. I might add that was the understanding of the Governor before we attended those meetings.

Mr. HOUSTON. That is correct.

Mrs. GREEN. And you are again instructed by the same Governor? What Governor?

Mr. HOUSTON. Governor Langlie.

Mrs. GREEN. Thank you.

Have you made any technical studies of the effect on the aluminum industries in the Pacific Northwest?

Mr. HOUSTON. That is a problem that relates to ultimate distribution of energy. Our meeting here relates to power supply, not ultimate distribution of energy. And I do not believe that this is quite

relevant to the present problem, but I will answer it this way: No, I have made no study, as such.

Mrs. GREEN. The aluminum industry is a very important part of this power development in the Northwest that we might bring new industries there in the area.

Mr. HOUSTON. Are you asking me that question?

Mrs. GREEN. Would you agree?

Mr. HOUSTON. I have not made up my mind whether it is or not.

Mrs. GREEN. Is the statement——

Mr. SISK. Will the gentlelady yield for a question?

Mrs. GREEN. Yes.

Mr. SISK. Since Governor Langlie was mentioned and the gentleman is representing Governor Langlie, I would just like to ask a question with reference to the statement that Governor Langlie made to the Senate committee in a hearing in Portland, Oreg., this April. I am wondering if you agree with it.

His statement was this: That Hells Canyon was just the first step in a master scheme to transport water from the Columbia Basin to the State of California. Do you concur with your Governor in that statement?

Mr. HOUSTON. I agree that if water is to be taken from the Pacific Northwest to California, that that is the most feasible place from which the water can be taken.

Mr. SISK. And high Hells Canyon Dam would fit into that program?

Mr. HOUSTON. It would, sir.

Mr. SISK. Would you say that the more highly developed the power facilities, dams, irrigation, and so forth are in the Northwest, the better chance that California has to take water from the Northwest?

Mr. HOUSTON. Just what do you mean by more highly developed?

Mr. SISK. The more dams that you have built, the more storage capacity you have, the more powerplants you have is development. Is that not correct?

Mr. HOUSTON. Yes, but there is also the development of thermal-electric generation.

Mr. SISK. Let us not get involved in some of your technical discussion there. I would just like to bring out that I think it would be foolish for either me or you to assume that the more highly developed the power and the water needs of the Northwest would be—it would be foolish to assume that would make it easier for the State of California to take your water. Would you not agree with that statement?

Mr. HOUSTON. I do not see it is relevant.

Mr. SISK. I yield back.

Mrs. GREEN. In discussing the aluminum industry which I think is a part of this overall picture, I have this quote also from page 9307 of the Federal Power Commission hearings:

> I have had with Governor Langlie just recently a discussion of that problem regarding the proposed new aluminum load at The Dalles. We do not like the idea of an aluminum plant moving in there and absorbing the energy of the area. We just do not propose to become the pot line for the world. We would prefer that large aluminum loads be taken to areas remote from the large centers of population.

Of course, in the Northwest you have unemployment problems.

My question would be: Would you and Governor Langlie, as Governor of the State, prefer to see the aluminum industry developed in Canada rather than in our own Pacific Northwest?

Mr. HOUSTON. As the consultant to Governor Langlie, I do not dictate what he prefers or does not prefer.

Mrs. GREEN. But would you prefer it personally as his consultant?

Mr. HOUSTON. It makes no difference to me.

Mrs. GREEN. That statement would indicate that you would not want the aluminum industry in the States of Oregon and Washington.

Mr. HOUSTON. I am under the impression that at the time that statement was made there was a decided misunderstanding as to what the statement referred to and——

Mrs. GREEN. Mr. Houston——

Mr. HOUSTON. May I finish?

Mrs. GREEN. Yes; quickly.

Mr. HOUSTON. In appendix N–1, House Document 531, there is a statement that by 1959 or 1960——

Mrs. GREEN. Mr. Houston, I think we are not going to have time to go into that. I simply want an answer to the question.

Mr. SAYLOR. I object to this. I think the witness is trying to answer the question which was asked.

Mrs. GREEN. I am only asking the question: Would you prefer personally to have the aluminum industry built in Canada rather than the States of Oregon and Washington?

Mr. HOUSTON. My preference in that matter has nothing to do with the problem.

Mrs. GREEN. All right.

Mr. Parry, in the House hearings on Hells Canyon in 1952 I believe that you appeared as representing yourself as chairman of the Idaho membership of the Columbia River Compact Commission. Is that right? I think that is found on page 625. And this statement was made by you at that time:

> Accordingly, Idaho must unalterably oppose any power dam dependent on the waters of the Snake River above the mouth of the Salmon River.

And then the reason you gave was the conflict between downstream power and upstream irrigation.

The three Idaho Power Co. dams are above the mouth of the Salmon River?

Mr. PARRY. They are.

Mrs. GREEN. Then why do you advocate the three-dam plan now when in 1952 your position as chairman of the compact commission was in opposition to any power dam, public or private, above the mouth of the Salmon River?

Mr. PARRY. Because the specific water licenses issued by the State of Idaho to the power company subjects their water rights in accordance with the Idaho Constitution, as amended in 1921—subjects the power rights to all present and future upstream water rights. So also are the findings and order of the Federal Power Commission, as recommended by the staff of that Commission and as requested by the company specifically, and with the thought in mind that by reason of the specific language in the water licenses and the FPC licenses,

if granted, there will be a binding unalterable provision whereby any rights of the Idaho Power Co. will be junior and inferior to all upstream water rights either now or in the future for an unlimited time.

Mrs. GREEN. You mean that condition has changed between 1952 and now?

Mr. PARRY. Yes, ma'am.

Mrs. GREEN. I think that is an interesting statement.

The testimony which was given by the gentleman representing the construction company, Mr. Williams, was that the plans were for the dam to be rock filled. Is that right? That was the testimony he gave this morning?

Mr. PARRY. It was.

Mrs. GREEN. Am I correct that the application by the Idaho Power Co. for the 3 dams, the Brownlee and the other 2 also, calls for concrete slab dams?

Mr. PARRY. There has been a great deal of discussion on that——

Mrs. GREEN. Could your answer that question? Is not that right that the application of the Idaho Power Co. is for concrete slab?

Mr. PARRY. I am endeavoring to answer it. May I?

The initial application provided for the concrete slabs. During the course of the hearing it was stated that the company desired to make the dam impervious for water, which is the purpose of the slabs or any other thing, by using instead of the slab an earth core. That was recommended also by the Federal Power Commission engineers. And stated that the earth was available——

Mrs. GREEN. May I interrupt you? You say your initial application was for concrete slab. Have you made another application to the FPC?

Mr. PARRY. There were supplements filed during the course of the proceedings.

Mrs. GREEN. But you have not filed any application for rock-filled dams?

Mr. PARRY. As I understand, yes, they are all rock dams.

Mrs. GREEN. The application itself is for concrete slab dam?

Mr. PARRY. No, rock dam.

Mrs. GREEN. For concrete slab. Is that not what your application states?

Mr. PARRY. No. I think there is some confusion. Whatever dams are built are built of rock. Now obviously rock is porous. Some—I think the engineers use the word "membrane." Some membrane has to be used to keep the water from filtering through the porus rock. The discussion has been: Is the best method to do that to put a concrete face or slab on the front of the dam or to use an earth core?

Now the initial license application of the company provided that the membrane be an upstream concrete slab lying on the rock dam.

Mrs. GREEN. Does not the testimony of Mr. Puls indicate that would not be suitable for that particular region?

Mr. ASPINALL. The time of the gentlewoman from Oregon has expired. The Chair recognizes the gentleman from Idaho.

Dr. MILLER. Will the gentleman yield his time to me?

Mr. BUDGE. I yield.

Dr. MILLER. All his time to me?

Mr. BUDGE. Yes.

Dr. MILLER. Mr. Chairman, I have a motion that all further action on the so-called Hells Canyon bill be indefinitely postponed.

Mr. SAYLOR. Second the motion.

Dr. MILLER. Mr. Chairman, I move the previous question.

Mr. ASPINALL. You have heard the motion.

Mr. EDMONDSON. I will make the point of order there is no quorum present.

Dr. MILLER. A quorum is present.

Mr. SISK. I ask for a rollcall on that.

Mr. ASPINALL. A rollcall has been requested.

Dr. MILLER. The lady from Oregon is walking out. I want the record to note that.

Mr. ASPINALL. The rollcall will proceed.

Mrs. HARRIS. Mr. Berry?

Mr. BERRY. Here.

Dr. MILLER. Just a minute. Rollcall has been requested upon the previous question.

Mr. ASPINALL. That is right.

Mrs. HARRIS. Mr. Berry?

Mr. BERRY. Aye.

Mrs. HARRIS. Mr. Budge?

Mr. BUDGE. Aye.

Mrs. HARRIS. Mr. Chenoweth?

Mr. SISK. Mr. Chairman, I recommend the regular order.

Mr. ASPINALL. We are having the regular order.

Call the roll, please.

Mrs. HARRIS. Mr. Chenoweth?

Mr. CHENOWETH. Present.

Mrs. HARRIS. Mr. Christopher?

Mrs. PFOST. No, by proxy.

Mrs. HARRIS. Mr. Dawson?

Mr. DAWSON. Present.

Mrs. HARRIS. Mr. Diggs?

Mrs. PFOST. No, by proxy.

Mrs. HARRIS. Mr. Edmondson?

Mr. EDMONDSON. No.

Mrs. HARRIS. Mrs. Green? Mrs. Green?

Mrs. GREEN. No.

Mrs. HARRIS. Mr. Haley?

(No response.)

Mrs. HARRIS. Mr. Hosmer?

Mr. HOSMER. Aye.

Mrs. HARRIS. Mr. Metcalf?

Mrs. PFOST. No, by proxy.

Mrs. HARRIS. Mr. Miller?

Dr. MILLER. Aye.

Mrs. HARRIS. Mr. O'Brien?

Mrs. PFOST. No, by proxy.

Mrs. HARRIS. Mrs. Pfost?

Mrs. PFOST. No.

Mrs. HARRIS. Mr. Pillion?

Mr. PILLION. Aye.

Mrs. HARRIS. Mr. Powell?
Mrs. PFOST. No, by proxy.
Mrs. HARRIS. Mr. Rhodes?
(No response.)
Mrs. HARRIS. Mr. Rogers?
Mrs. PFOST. No, by proxy.
Mrs. HARRIS. Mr. Rutherford?
Mrs. PFOST. No, by proxy.
Mrs. HARRIS. Mr. Saylor?
Mr. SAYLOR. Aye.
Mrs. HARRIS. Mr. Shuford?
Mrs. PFOST. No, by proxy.
Mrs. HARRIS. Mr. Sisk?
Mrs. PFOST. No, by proxy.
Mrs. HARRIS. Mr. Udall?
Mrs. PFOST. No, by proxy.
Mrs. HARRIS. Mr. Utt?
(No response.)
Mrs. HARRIS. Mr. Westland?
(No response.)
Mrs. HARRIS. Mr. Wharton?
(No response.)
Mrs. HARRIS. Mr. Young?
Mr. YOUNG. Aye.
Dr. MILLER. I challenge these proxies. They are not to suspend the hearings.
Mr. ASPINALL. The reporter will read the motion.
(Dr. Miller's motion was read by the reporter.)
Mrs. GREEN. A point of inquiry.
Mr. EDMONDSON. I would like to be heard on the adequacy of the proxies.
This rollcall is on the previous question, as I understand, Mr. Chairman. Is that not right.
Mrs. PFOST. Mr. Chairman?
Mrs. GREEN. Mr. Chairman?
Mr. EDMONDSON. Mr. Chairman?
Mr. ASPINALL. Just a minute. The Chair recognizes the gentlewoman from Oregon.
Mrs. GREEN. A point of inquiry. The motion we are now voting on is to move the previous question. Is that right?
Mr. ASPINALL. That is right.
Dr. MILLER. A point of order against the proxies.
Mrs. PFOST. Mr. Chairman?
Mr. ASPINALL. Does the lady wish to be heard on the point of order?
Mrs. PFOST. I would like to make a point of order—I will withdraw my proxies, Mr. Chairman.
Mr. ASPINALL. The proxies are withdrawn.
Mr. RHODES. How am I recorded?
(Mr. Rhodes had just entered the room.)
Mr. ASPINALL. The gentleman has not been recorded as yet.
Mr. RHODES. I vote "Aye."
Mr. ASPINALL. The gentleman does not have any right to vote until the clerk calls his name.

The proxies are not accepted on this vote.

The clerk will call the name of the gentleman from Arizona.

Mrs. HARRIS. Mr. Rhodes?

Mr. RHODES. Aye.

Mr. EDMONDSON. Mr. Chairman?

Mr. ASPINALL. For what reason does the gentleman wish to be recognized?

Mr. EDMONDSON. A parliamentary inquiry.

Mr. ASPINALL. He will state it.

Mr. EDMONDSON. At what point will a point of order that a quorum is not present be in order?

Mr. ASPINALL. As soon as this rollcall is over.

Mr. EDMONDSON. I want to be recognized at that time.

Dr. MILLER. Mr. Chairman, I want to comment, because you recognized and the minutes show a quorum was present when the action was taken, and presumably a quorum is still present.

Mr. ASPINALL. The motion before the house is a motion on the previous question. The "ayes" are 7 and the "nays" are 13—wait a minute. The proxies do not count.

The vote is 8 "ayes" and 3 "nays." The motion for the previous question is agreed to.

Mr. EDMONDSON. Mr. Chairman, I make a point of order that a quorum is not present by the terms of the vote just taken and by the present composition of the committee.

Dr. MILLER. You ruled a quorum was present when the action was taken, and if someone walks out, we are still in the same legislative procedure we were before in the House. A quorum was present when the previous motion was made and was present when the motion was made to table all Hells Canyon bills, and we are still actively under that same motion.

Mr. EDMONDSON. May I be heard on the point of order?

Mr. ASPINALL. As soon as Dr. Miller is finished.

Dr. MILLER. No one can by walking out destroy a quorum. That has been established many times in the committee and in the House. The Speaker of the House many times counts those walking out to the cloakroom so there will not be a quorum present. That has been established over and over again, if people walk out when business is pending, and the same rule applies as in the House. The pending motion is to postpone all hearings.

Mrs. PFOST. Mr. Chairman?

Mr. ASPINALL. The Chair recognizes the gentleman from Oklahoma, Mr. Edmondson.

Mr. EDMONDSON. I maintain the point of order that a quorum is not present holds on two grounds: First, the rollcall as just concluded on the previous question shows on its face a quorum is not present; and, secondly, a quorum is not present at this time.

Dr. MILLER. Will the gentleman yield?

Mr. PILLION. A point of order, Mr. Chairman.

Mr. ASPINALL. The gentleman's point of order is well taken. Does anybody else wish to be heard?

The Chair recognizes the gentlewoman from Idaho.

Mrs. PFOST. A parliamentary inquiry, Mr. Chairman.

Mr. ASPINALL. A parliamentary inquiry is not in order.

The Chair is ready to rule. The Chair rules that the motion for the previous question was intervening business and the motion to adjourn is in order.

Dr. MILLER. I move that all action on the Hells Canyon bills be postponed.

Mr. ASPINALL. The motion is not in order.

The point of order made against a quorum is well taken and——

Mr. EDMONDSON. I move we adjourn.

Mr. ASPINALL. You do not need to make the motion. The committee stands adjourned because of a failure of a quorum.

Mr. HOSMER. I appeal from the decision of the Chair.

Mr. EDMONDSON. I make the point of order that a quorum is not present to transact any further business.

Dr. MILLER. Appeal from the decision of the Chair on your ruling has been asked. I demand a vote on it.

Mr. EDMONDSON. Mr. Chairman, there can be no appeal from the decision of the Chair when there is not a quorum to vote on the appeal, and we do not have a quorum present, Mr. Chairman.

Mr. ASPINALL. The committee stands adjourned.

(Whereupon, at 12:40 p. m., the subcommittee adjourned, to reconvene at the call of the Chair.)

(COMMITTEE NOTE.—Pursuant to permission granted on page 267, the following statements in opposition to the legislation appear at this point in the record.)

STATEMENT OF F. P. CHAMP FOR THE CHAMBER OF COMMERCE OF THE UNITED STATES WITH RESPECT TO H. R. 4719

My name is Frederick P. Champ. I am president of both the Cache Valley Banking Co. and the Utah Mortgage Loan Corp., of Logan, Utah. I am chairman of the board, Commercial Security Bank, Ogden, Utah, and member, board of governors, Mortgage Bankers Association of America. I was a member of the task force on Federal Aid to Highways, Commission on Intergovernmental Relations.

I am making this statement for the Chamber of Commerce of the United States. I am a former director and vice president of the chamber and have been a member of its natural resources committee for the past 12 years.

The Chamber of Commerce of the United States is opposed to the principle of Federal construction of a power dam at Hells Canyon on the Snake River, as proposed in H. R. 4719 and similar bills.

Instead, we recommend that hydroelectric power from the Snake River be developed according to the terms of the Federal Power Act, which permits the Federal Power Commission to decide whether an applicant should be licensed. An application for a development license by the Idaho Power Co. is now pending before the Federal Power Commission.

According to testimony presented before the Federal Power Commission, the Idaho Power Co. proposes to develop hydroelectric power from the Snake River with a series of three dams to be built in an order determined by financial, economic, and engineering criteria. Construction would be financed with funds borrowed from investors and company stockholders. The company would produce electricity at a regulated price for consumer use in its service area. This power would be interconnected with the Northwest power pool for possible use in other areas. These new facilities and their operations would be subject to taxation by Federal, State, and local governments.

These facts were presented in testimony by expert technical witnesses for the company. Staff members of agencies of the Federal Government also were questioned during the FPC hearings, which covered a period of several months and

resulted in a record of some 19,000 pages. All of the facts and figures necessary to judge the adequacy of the company proposal were included in that record.

We believe that the FPC hearings brought out the following points:

1. The company program will develop the full economic potential of that portion of the Snake River.

2. The company program provides an immediate and substantial contribution to the power requirements of the region.

3. Power can be produced from the company dams at lower cost than from a single Federal dam.

4. The three-dam program of the company provides adequate water storage for power production.

5. The company program satisfies the other purposes of flood control, navigation, and recreation as required by the Federal Power Act.

6. The company plan is feasible, economic, and soundly engineered.

In its application for a development license, the Idaho Power Co. agrees to be regulated by the Federal Power Commission according to terms of the Federal Power Act. In addition, its operations will be subject to regulation by several other Federal agencies regarding such matters as flood control, navigation, securities, and rates. Furthermore, the Idaho Public Utilities Commission has jurisdiction over all phases of the electric utility business in that State. It should be evident that the public interest in the resources of the Snake River would be adequately protected under the company plan.

We believe that all the pertinent evidence now available shows conclusively that Snake River power should be developed in accordance with the proposed program of the Idaho Power Co. We believe such development to be in the best interest of the local region and of the entire country.

All non-Federal projects on navigable streams are subject to the Federal Power Act of 1920—the only specific water-power policy ever enacted by the Congress. Justification for most Federal projects, on the other hand, has been based on either the commerce clause or the general-welfare clause of the Constitution, or in the name of national defense. In this way, many Federal projects avoid being subject to some of the important controls of the Federal Power Act.

Using the commerce clause of the Constitution, the Federal Government has assumed authority to generate electricity as a byproduct of projects to reclaim arid lands, control floods, or improve navigation. But even this authority has been grossly abused.

Commercial production of electric power from the Snake River is not justifiable as a legitimate function of the Federal Government. Only a relatively minor portion of the Federal investment, estimated to exceed $400 million, would apply to other than power production. The Federal Hells Canyon proposal is primarily and essentially a hydro-power project to be constructed with taxpayers' money. It is significant that this project is not being promoted by any Federal agency, but, in fact, is actually opposed by the agency which would be authorized to construct and operate it.

We believe there are four important reasons for opposing a Federal Hells Canyon Dam:

1. Federal construction would require the expenditure of more than $400 million of tax money collected from the Nation's taxpayers. In view of the great number of river developments requiring Federal participation, Federal funds should not be used for a project in which private enterprise is ready and willing to invest its money. Thus, the burden on the taxpayer would not be increased by private development of Snake River power.

2. Federal construction and operation of Hells Canyon Dam would produce no tax revenues to local, State, or Federal governments. Under private ownership, as proposed by Idaho Power Co., annual tax benefits would amount to nearly $10 million. Over a period of 50 years, the company would pay approximately $487 million in taxes to local, State, and Federal governments. Thus, instead of a $400-million tax burden, there would be a $487-million tax gain.

3. Federal construction of power facilities at Hells Canyon would add to the present Federal system in the Columbia Basin, thus perpetuating the preferential treatment of certain power customers. Recent studies indicate that about 90 percent of the taxpayers of this country are paying part of the electric power bills of the preferred 10 percent. The Hoover Commission has just reported that subsidized public power serves only 1 in every 10 persons in the United States. This subsidy, according to the Commission's report on water resources and power, is sharply illustrated in the case of the Middle Atlantic States, which have 20 percent of the total population, pay nearly 30 percent of the taxes, but

receive no Federal power. In the case of a Federal Hells Canyon Dam, a few power users would benefit through the subsidies of many, whereas under the Idaho Power Co. development, all the power users would pay their fair share of the power costs.

4. Commercial production of power by the Federal Government cannot be employed as a yardstick to measure the performance of private utilities. The yardstick theory of Federal power rates is refuted when the real difference in power rates is demonstrated. The Hoover Commission is the latest group to show that Federal power generally has been sold at below the cost of production. Not knowing that the yardstick compares dissimilar conditions, the general public has come to believe that Federal power is cheap. This belief has been encouraged by those who advocate more and more Government power projects and less and less private enterprise. The fact is that Federal power rates are low only because three items of cost are neglected: (1) Government has written off to navigation, flood control, and other functions part of the costs of power; (2) Government pays lower rates of interest on borrowed funds and often absorbs this cost in general operations rather than charging it against power; and (3) Government avoids tax obligations which are paid by private business. The yardstick, therefore, is misleading because of these missing elements of cost.

The Chamber of Commerce of the United States believes that development of the water-power resources of the country, although in the national interest, is a job for private enterprise and all levels of government. Each should undertake those projects in which it has definite interest and responsibility. Thus, a comprehensive river-basin development program may require the participation of Federal agencies and the use of Federal funds. A multi-purpose dam on an interstate stream may engage Federal and State governments, local public bodies, and private industry, each sharing in the cost of facilities which are its legitimate business. A dam purely for power should be developed by either a public or a private group.

Over the years the Congress has authorized many projects for Federal construction which have produced tangible and worthwhile benefits in flood control, navigation, irrigation, water supply, and pollution abatement.

Such Federal programs should be continued wherever the national interest can be served economically and feasibly. However, the Congress should not authorize any Federal dam purely for power purposes. It should, instead, recognize and encourage the willingness of local groups to finance and construct any project which will produce power for local use. The Congress should exercise only its constitutional powers of regulation and protection of the public resources in the national interest.

The Congress, therefore, should not authorize Federal construction of a power dam at Hells Canyon, and should not restrain the Federal Power Commission from carrying out its responsibilities and duties under the Federal Power Act.

BUFFALO, N. Y., CHAMBER OF COMMERCE STATEMENT ON SNAKE RIVER (HELLS CANYON) RECLAMATION PROJECT

In the interest of economy and free enterprise, the Government should not enter into business and industrial fields in which private enterprise is fully capable of financing, developing, and operating.

The authorization for the construction, operation, and maintenance of the initial phase of the Snake River reclamation project by the Secretary of the Interior violates the rights of private companies who are able and willing to develop the necessary facilities.

Government intrusion in this area is as much opposed as are similar proposals for Government development of additional hydroelectric facilities on the Niagara River.

It is incumbent upon Congress to protect the ownership and operation of private business by defeating all proposals that would place the Federal Government in competition with private interests if the time-tested free-enterprise system of this Nation is to continue.

(COMMITTEE NOTE.—The following statements, letters, and resolutions are inserted at this point in the record pursuant to a previous unanimous-consent request of Mr. Budge. Many of these statements were made at the Senate committee's field hearings in Boise. They

are inserted here because the authors and organizations have requested Congressman Budge to present their statements to the House committee:)

ST. ANTHONY, IDAHO, *July 12, 1955.*

Hon. HAMER BUDGE,
House of Representatives, Washington, D. C.:

We of the Wilford Canal Co., St. Anthony, Idaho, stand opposed to Hells Canyon bill, H. R. 5743, as we have opposed in the past. Please represent these sentiments.

WILFORD CANAL CO.
(In care of Eric Johnson, St. Anthony, Idaho).

IDAHO FALLS, IDAHO, *July 1, 1955.*

Hon. HAMER BUDGE,
Congressman, Second District of Idaho,
Washington, D. C.

DEAR SIR: The board of directors of the Martin Canal Co., in a special board meeting held in the offices of the company in Idaho Falls, Idaho, passed and ordered sent to you the following resolution.

RESOLUTION

Whereas the Martin Canal Co. is a duly organized company of the State of Idaho under the laws of said State of Idaho, and

Whereas the business of said company is to obtain and deliver to its stockholders sufficient water to mature crops for successful agricultural operations without profit to the company, and

Whereas the Martin Canal Co. is located and operates in Bonneville County, Idaho and receive their water from the Snake River floodwater rights and storage rights on the waters of the said Snake River, and

Whereas it seems that the construction of the Hells Canyon project will definitely undermine and may make of no avail the rights acquired over the past 50 years if the present legislation authorizing the construcion of Hells Canyon Dam is passed: Therefore, be it

Resolved, That the Martin Canal Co. go on record as opposing the Federal Hells Canyon Dam project and request you, Honorable Hamer Budge to oppose H. R. 4719 as our duly elected representative.

MARTIN CANAL CO.,
RUDOLPH PANCHERI, *President.*
VERN BINGHAM, *Director.*
DICK W. JAHN, *Director.*

I, C. R. Black, duly appointed secretary of the Martin Canal Co., hereby certify that the above is a true and correct copy of the resolution as passed by the directors of the Martin Canal Co. of the 1st day of July 1955.

[SEAL] C. R. BLACK, *Secretary, Martin Canal Co.*

EMMETT KIWANIS CLUB,
June 13, 1955.

Representative HAMER H. BUDGE,
House of Representatives,
Washington, D. C.

DEAR REPRESENTATIVE BUDGE: Enclosed is a copy of a resolution which the Emmett Kiwanis Club introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955 hearing in Boise, Idaho, on S. 1333.

Will you please introduce the copy of this same resolution in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced.

We wish to restate our firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that our position is made of positive record wherever the subject may come up.

Respectively,

LOUIS GORRONO, *President.*

Whereas there have been introduced in the Congress of the United States certain bills to authorize the construction, operation, and maintenance of a single high dam at the Hells Canyon site on the Snake River between Idaho and Oregon; and

Whereas the legal staff of the Federal Power Commission has favored the construction of three dams as planned by private enterprise and the Department of Interior has agreed to the findings of the Federal Power Commission; and

Whereas private enterprise has demonstrated its desire, its willingness, and its ability to construct these dams and to develop this same natural resource with approximately the same results; and

Whereas construction by private enterprise would be completed with private capital at an estimated reduction in cost of $296 million; and

Whereas there is an urgent need to effect such a saving and reduce Federal Government expenditures; and

Whereas those certain bills have, in order to make them more attractive, incorporated provisions for construction of facilities at Scriver Creek on the Payette River, which are in no way a part of the Hells Canyon development; and

Whereas the protection of present and future water rights along the Snake River and its tributaries is imperative to the welfare of the people of Idaho: Now, therefore, be it

Resolved, That the Kiwanis Club of Emmett, Idaho, strongly opposes the construction of a high dam at Hells Canyon by the Federal Government and strongly opposes the attempt to tie in development of the Scriver Creek facilities with the Hells Canyon construction and that this resolution shall be presented to the Subcommittee on Irrigation and Reclamation at the hearing in Boise, Idaho, on April 4, 1955, as evidence of the beliefs of this organization: Be it further

Resolved, That copies of this resolution shall be forwarded to each Member of the Idaho congressional delegation with the request that they lend their assistance accordingly.

LOUIS GORRONO,
President.

IDAHO POTATO STARCH CO.,
Blackfoot, Idaho, June 14, 1955.

Hon. HAMER H. BUDGE,
Member of Congress, House Office Building, Washington, D. C.

DEAR MR. BUDGE: I am handing you herewith a certified copy of a resolution of the corporation adopted by the directors of Idaho Potato Starch Co., at a meeting of the directors and officers held at the registered office of the corporation at Blackfoot, Idaho, on the 1st day of April 1955, together with three copies of such resolution.

You may use with our approval the above-mentioned resolution at any committee meeting or hearing or on the floor of the House of Representatives as suits your handling of the opposition to the enactment of Hells Canyon legislation.

We know that when Federal dams are constructed on streams the waters of which are used for irrigation, it would not be too difficult to show that the highest duty of water is for power purposes and thus curtail the use of water required by prior users for irrigation purposes.

Yours very truly,

J. H. ANDERSEN, *Secretary.*

RESOLUTION OF THE IDAHO POTATO STARCH CO., OF BLACKFOOT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Whereas this corporation is dependent for its existence upon the products of the irrigated farms of Idaho; and

Whereas a group of approximately 1,000 representatives of water districts throughout the Snake River Valley from the Oregon line to the Wyoming border oppose the construction of the proposed high dam at Hells Canyon; and

Whereas, in the opinion of this corporation, the construction of said dam would be detrimental to the people of the State of Idaho: Now, therefore, be it

Resolved by the board of directors of Idaho Potato Starch Co., That said cor-

poration, its officers, directors, and shareholders protest the construction, at public expense, of the proposed Hells Canyon Dam.

STATE OF IDAHO,
County of Bingham, ss:

I, J. H. Andersen, the duly elected, qualified, and acting secretary of Idaho Potato Starch Co., a corporation, do hereby certify that the above and foregoing is a full, true, and correct copy of a resolution adopted at a regular meeting of the board of directors of Idaho Potato Starch Co. held at Blackfoot, Idaho, on the 1st day of April 1955.

In witness whereof, I have hereunto set my hand attested by the seal of said corporation this the 1st day of April 1955.

J. H. ANDERSEN, *Secretary.*

RESOLUTION

Whereas this corporation is dependent for its existence upon the products of the irrigated farms of Idaho, and

Whereas a group of approximately 1,000 representatives of water districts throughout the Snake River Valley from the Wyoming line to the Oregon border oppose the construction of the proposed high dam at Hells Canyon, and

Whereas, in the opinion of this corporation, the construction of said dam would be detrimental to the people of the State of Idaho: Now, therefore, be it

Resolved by the Board of Directors of Idaho Potato Starch Co., That said corporation, its officers and directors and shareholders protest the construction, at public expense, of the proposed Hells Canyon Dam.

STATE OF IDAHO,
County of Bingham, ss:

I, J. H. Andersen, the duly elected, qualified, and acting secretary of Idaho Potato Starch Co., a corporation, do hereby certify that the above and foregoing is a full, true, and correct copy of a resolution adopted at a regular meeting of the board of directors of Idaho Potato Starch Co., held at the registered office of said corporation, at Blackfoot, Idaho, on the 1st day of April 1955, and said resolution has not been vacated, amended, or repealed.

In witness whereof, I have hereunto set my hand and affixed the official seal of said corporation this the 14th day of June 1955.

[SEAL] J. H. ANDERSEN, *Secretary*

POCATELLO, IDAHO, *July 13, 1955.*

Hon. HAMER H. BUDGE,
United States Representative,
House Office Building, Washington, D. C.:

You have permission to use our statement made at the Hells Canyon hearing in Boise.

JOHN H. WEBB,
Secretary Idaho Farm Bureau Federation.

STATEMENT OF J. E. SKALET AND GUY ERICKSON, OWNERS AND MANAGERS OF SKALET-ERICKSON CO., A REAL ESTATE AND INSURANCE FIRM LOCATED AT ST. ANTHONY, IDAHO

We wish to register our protest against the pending plan to build a high Federal dam on the Snake River, in Hells Canyon, State of Idaho.

We have spent our lives working in the area served and supported by the North Fork of the Snake River, and our particular business has given us a thorough insight into the almost complete dependency of our great area on the waters of the Snake River, not only for our present but for any future development. In studying the proposed plan and its proposed use, together with the various legal opinions regarding same, it appears that ample proof has been well established such a Federal project would necessarily constitute great present

and future damage to the highly important water rights of those of us who live in the upper Snake River Valley.

It seems apparent, from evidence given, that 90 percent of the benefit and use of the proposed Federal dam will go to the States of Oregon and Washington. While we are not familiar with the legal niceties of this situation, we are certain that anyone, given an honest opinion, would agree it morally wrong for the Federal Government to permit such legalized theft of our rights by establishing an authority which would supersede the sovereignty of the State of Idaho and permit our water rights, our careful planning of our water and irrigation systems and our plans for future development of our area to be, in effect, sold down the river to our neighboring States.

We do not wish to see either Oregon or Washington retarded in their needs, but we do violently protest the flagrant injustice of aiding those States at such a huge sacrifice to the people who have their lives invested in the upper Snake River Valley.

We respectfully urge and hope the House committee will refuse the proposal to construct the Hells Canyon Dam.

CITY OF GOODING,
Gooding, Idaho, June 20, 1955.

Senator HENRY DWORSHAK,
United State Senate,
Senate Office Building, Washington, D. C.

DEAR SENATOR DWORSHAK: The following information is for use at the Hells Canyon hearing in Washington on June 29, 1955, taken from official minutes of the city of Gooding council meeting held Wednesday, March 30, 1955.

The mayor and council wish to issue a protest to the Committee of the Interior, going on record opposing the construction of a Federal high dam at the Hells Canyon site.

Yours very truly,

HARLEY V. CRIPPEN,
Mayor of Gooding, Idaho.

STATEMENT OF F. P. CHAMP FOR THE CHAMBER OF COMMERCE OF THE UNITED STATES

My name is Frederick P. Champ. I am president of both the Cache Valley Banking Co. and the Utah Mortgage Loan Corp., of Logan, Utah. I am chairman of the board, Commercial Security Bank, Ogden, Utah, and member, board of governors, Mortgage Bankers Association of America. I was a member of the task force on Federal Aid to Highways, Commission on Intergovernmental Relations.

I am making this statement for the Chamber of Commerce of the United States. I am a former director and vice president of the chamber and have been a member of its natural-resources committee for the past 12 years.

The Chamber of Commerce of the United States is opposed to the principle of Federal construction of a power dam at Hells Canyon on the Snake River, as proposed in H. R. 4719 and similar bills.

Instead, we recommend that hydroelectric power from the Snake River be developed according to the terms of the Federal Power Act, which permits the Federal Power Commission to decide whether an applicant should be licensed. An application for a development license by the Idaho Power Co. is now pending before the Federal Power Commission.

According to testimony presented before the Federal Power Commission, the Idaho Power Co. proposes to develop hydroelectric power from the Snake River with a series of three dams to be built in an order determined by financial, economic, and engineering criteria. Construction would be financed with funds borrowed from investors and company stockholders. The company would produce electricity at a regulated price for consumer use in its service area. This power would be interconnected with the northwest power pool for possible use in other areas. These new facilities and their operations would be subject to taxation by Federal, State, and local governments.

These facts were presented in testimony by expert technical witnesses for the company. Staff members of agencies of the Federal Government also were questioned during the FPC hearings, which covered a period of several months and resulted in a record of some 19,000 pages. All of the facts and figures necessary to judge the adequacy of the company proposal were included in that record.

We believe that the FPC hearings brought out the following points:

1. The company program will develop the full economic potential of that portion of the Snake River.

2. The company program provides an immediate and substantial contribution to the power requirements of the region.

3. Power can be produced from the company dams at lower cost than from a single Federal dam.

4. The three-dam program of the company provides adequate water storage for power production.

5. The company program satisfies the other purposes of flood control, navigation, and recreation as required by the Federal Power Act.

6. The company plan is feasible, economic, and soundly engineered.

In its application for a development license, the Idaho Power Co. agrees to be regulated by the Federal Power Commission according to terms of the Federal Power Act. In addition, its operations will be subject to regulation by several other Federal agencies regarding such matters as flood control, navigation, securities, and rates. Furthermore, the Idaho Public Utilities Commission has jurisdiction over all phases of the electric utility business in that State. It should be evident that the public interest in the resources of the Snake River would be adequately protected under the company plan.

We believe that all the pertinent evidence now available shows conclusively that Snake River power should be developed in accordance with the proposed program of the Idaho Power Co. We believe such development to be in the best interest of the local region and of the entire country.

All non-Federal projects on navigable streams are subject to the Federal Power Act of 1920—the only specific waterpower policy ever enacted by the Congress. Justification for most Federal projects, on the other hand, has been based on either the commerce clause or the general welfare clause of the Constitution, or in the name of national defense. In this way, many Federal projects avoid being subject to some of the important controls of the Federal Power Act.

Using the commerce clause of the Constitution, the Federal Government has assumed authority to generate electricity as a byproduct of projects to reclaim arid lands, control floods, or improve navigation. But even this authority has been grossly abused.

Commercial production of electric power from the Snake River is not justifiable as a legitimate function of the Federal Government. Only a relatively minor portion of the Federal investment, estimated to exceed $400 million, would apply to other than power production. The Federal Hells Canyon proposal is primarily and essentially a hydro power project to be constructed with taxpayers' money. It is significant that this project is not being promoted by any Federal agency, but, in fact, is actually opposed by the agency which would be authorized to construct and operate it.

We believe there are four important reasons for opposing a Federal Hells Canyon Dam:

1. Federal construction would require the expenditure of more than $400 million of tax money collected from the Nation's taxpayers. In view of the great number of river developments requiring Federal participation, Federal funds should not be used for a project in which private enterprise is ready and willing to invest its money. Thus, the burden on the taxpayer would not be increased by private development of Snake River power.

2. Federal construction and operation of Hells Canyon Dam would produce no tax revenue to local, State, or Federal governments. Under private ownership, as proposed by Idaho Power Co., annual tax benefits would amount to nearly $10 million. Over a period of 50 years, the company would pay approximately $487 million in taxes to local, State, and Federal governments. Thus, instead of a $400 million tax burden, there would be a $487 million tax gain.

3. Federal construction of power facilities at Hells Canyon would add to the present "Federal system" in the Columbia Basin, thus perpetuating the preferential treatment of certain power customers. Recent studies indicate that about 90 percent of the taxpayers of this country are paying part of the electric power bills of the "preferred" 10 percent. The Hoover Commission has just reported that subsidized public power serves only 1 in every 10 persons in the United States. This subsidy, according to the Commission's report on Water Resources

and Power, is sharply illustrated in the case of the Middle Atlantic States, which have 20 percent of the total population, pay nearly 30 percent of the taxes, but receive no Federal power. In the case of a Federal Hells Canyon Dam, a few power users would benefit through the subsidies of many, whereas under the Idaho Power Co. development, all the power users would pay their fair share of the power costs.

4. Commercial production of power by the Federal Government cannot be employed as a yardstick to measure the performance of private utilities. The yardstick theory of Federal power rates is refuted when the real difference in power rates is demonstrated. The Hoover Commission is the latest group to show that Federal power generally has been sold at below the cost of production. Not knowing that the yardstick compares dissimilar conditions, the general public has come to believe that Federal power is cheap. This belief has been encouraged by those who advocate more and more Government power projects and less and less private enterprise. The fact is that Federal power rates are low only because three items of cost are neglected: (1) Government has written off to navigation, flood control, and other functions part of the costs of power; (2) Government pays lower rates of interest on borrowed funds and often absorbs this cost in general operations rather than charging it against power; and (3) Government avoids tax obligations which are paid by private business. The yardstick, therefore, is misleading because of these missing elements of cost.

The Chamber of Commerce of the United States believes that development of the waterpower resources of the country, although in the national interest, is a job for private enterprise and all levels of government. Each should undertake those projects in which it has definite interest and responsibility. Thus, a comprehensive river-basin development program may require the participation of Federal agencies and the use of Federal funds. A multipurpose dam on an intrastate stream may engage Federal and State governments, local public bodies, and private industry, each sharing in the cost of facilities which are its legitimate business. A dam purely for power should be developed by either a public or a private group.

Over the years the Congress has authorized many projects for Federal construction which have produced tangible and worthwhile benefits in flood control, navigation, irrigation, water supply, and pollution abatement.

Such Federal programs should be continued wherever the national interest can be served economically and feasibly. However, the Congress should not authorize any Federal dam purely for power purposes. It should, instead, recognize and encourage the willingness of local groups to finance and construct any project which will produce power for local use. The Congress should exercise only its constitutional powers of regulation and protection of the public resources in the national interest.

The Congress, therefore, should not authorize Federal construction of a power dam at Hells Canyon, and should not restrain the Federal Power Commission from carrying out is responsibilities and duties under the Federal Power Act.

CALDWELL, IDAHO, *June 14, 1955.*

Representative HAMER BUDGE,
Washington, D. C.

DEAR SIR: When the Hells Canyon Dam hearing was held here in Boise recently I wrote a letter to the State chamber of commerce which was filed with the committee and was substantially as follows: "I wish to go on record opposing the Federal construction of the Hells Canyon power dam: I have lived in this area 76 years and have lived on an irrigated farm on the Boise project for 44 years. I am thoroughly convinced that the economic resources of this area should be developed by private interests. The Idaho Power Co. is doing an excellent job in this area."

Sincerely yours,

V. V. SPARKS.

NAMPA, IDAHO, *June 9, 1955.*

Congressman H. H. BUDGE,
House of Representatives, Washington, D. C.

DEAR SIR: I wish to voice my opinion again on the Hells Canyon issue. I am a native of Idaho and of the Snake River Valley. I am definitely opposed to a Government dam in the Hells Canyon stretch of the Snake River. Private

enterprise can do this job more efficiently and at far less cost. We have many worthy places to use our tax money. Why should it be spent to run competition with private business? Any or all of this statement may be used by you as exhibit if you wish.

Sincerely yours,

GORDON HANSEN.

NAMPA, IDAHO.

Hon. HAMER H. BUDGE,
United States House of Representatives,
Washington, D. C.

DEAR CONGRESSMAN BUDGE: I am again writing in regard to the construction of power facilities at Hells Canyon.

It seems to me our Government should have a program for cash conservation rather than one of spending. In this case private enterprise is ready, able, and willing to save the Government the expenditure by investing private venture money. Also private enterprise that is now regulated by Government commissions, will protect irrigation rights for our present and future projects more surely than will our Government.

I will appreciate having you express my opposition to any Federal Hells Canyon project.

Respectfully,

K. M. EGBERT.

NAMPA, IDAHO, *May 5, 1955.*

Hon. HAMER H. BUDGE,
House of Representatives, Washington, D. C.

DEAR CONGRESSMAN BUDGE: I am very much opposed to Federal Government ownership and development of Hells Canyon Dam.

I believe in our great American way of business being kept in private companies for ownership and development.

Sincerely,

Mrs. KATHERINE DOLES.

NAMPA, IDAHO, *June 9, 1955.*

Hon. HAMER H. BUDGE,
House of Representatives, Washington, D. C.

DEAR MR. BUDGE: As you know I am very much opposed to our Government building the Hells Canyon Dam and will appreciate any help you can give when ever the subject comes up.

Will be glad to have you use this letter in protest on that subject.

Yours truly,

T. A. DOMINICK.

NAMPA, IDAHO, *June 9, 1955.*

Representative HAMER H. BUDGE,
House of Representatives, Washington, D. C.

DEAR SIR: I understand that there will be another hearing before the House Insular Affairs Committee to try and get Congress to authorize the Federal construction of a high dam in Hells Canyon.

We have an electric company here in Idaho that wants to build private dams at this same location without any expense to the taxpayers.

We have a PUC that will regulate and see that our people get reasonable rates.

If our Government regulates and governs the people that should be its job, and a big one at that, without going into business competition with its citizens.

Another thing, if the reclamation and Army engineers complete the dams already authorized by Congress that will keep them busy for many years.

If there is money available to build new dams I think it should be paid in on the huge national debt. I am greatly worried as to what is going to happen to me when I get old and have to stop working. My meager savings won't buy enough to feed and clothe me and I'll have to go on relief.

I thought the reason for the present high taxes was for national defense, not to build dams that private companies want to build.

You have my authority to use this letter in any way you may see fit to protest authorization of the construction of Hells Canyon by the Federal Government.

Yours respectully,

R. W. MANGUM.

BOISE, IDAHO, *May 4, 1955.*

Representative HAMER H. BUDGE:

Just a note to let you know how I feel about the proposed high dam at Hells Canyon.

I am opposed to it for several reasons. From the information available since the hearing it certainly isn't practical and never could pay its way, and I am not in favor of the Government in business.

I am asking you to do all you can to prevent this bill from going through.

Sincerely yours,

W. J. STRAIT.

BOISE, IDAHO, *June 8, 1955.*

Representative HAMER H. BUDGE,
House of Representatives Office Building,
Washington, D. C.

DEAR MR. BUDGE: I would like to express my definite opposition to the proposed high dam at the Hells Canyon site on the Snake River.

I do not feel that this dam would provide the benefits for this area that many public power advocates would like to have us believe.

I am definitely opposed to public power anytime; especially when private enterprise with it's own investments is ready, willing, and able to serve the area in question much better.

My opinion, stated here, can be used as testimony if you desire.

Thanking you,

CALVIN L. BOWEN.

POCATELLO, IDAHO, *April 28, 1955.*

DEAR SIR: I have been a resident of this State for about 20 years. The Hells Canyon issue has been in my mind for some time and I would like to present my views.

At a time when the Government is talking about economizing, it does not seem logical they should be talking of spending upward of half a million dollars for a development private enterprise is ready to undertake without cost to taxpayers.

The Federal Power Commission should be allowed to come out with their decisions on who will build the dam.

In any case, I believe a natural resource in Idaho should be developed by an Idaho company.

I am for the Idaho Power Co. in Hells Canyon.

Mrs. J. C. CONARD.

POCATELLO, IDAHO, *April 28, 1955.*

DEAR SIR: I have been a resident of this State for about 20 years. The Hells Canyon issue has been in my mind for some time and I would like to present my views.

At a time when the Government is talking about economizing, it does not seem logical they should be talking of spending upward of half a million dollars for a development private enterprise is ready to undertake without cost to taxpayers.

The Federal Power Commission should be allowed to come out with their decisions on who will build the dam.

In any case, I believe a natural resource in Idaho should be developed by an Idaho company.

I am for the Idaho Power Co. in Hells Canyon.

Mrs. SALLY V. DUNN.

POCATELLO, IDAHO, *April 29, 1955.*

DEAR SIR: I would like to voice my opinion on the Hells Canyon Dam issue.

I think the Idaho Power Co. should be in Hells Canyon.

Seems to me the Government should be concerned in letting the work stay in the State. It would be less cost to the taxpayers and could be built sooner.

MRS. EVERETT ELLS.

WEISER, IDAHO, *March 29, 1955.*

Hon. HAMER H. BUDGE,
United States House of Representatives,
Washington, D. C.

DEAR CONGRESSMAN BUDGE: In your report to citizens of Idaho you ask for suggestions or comments. Please be informed that I am certainly not in favor of Federal spending on any structure in the Hells Canyon area. I refer to the high dam as advocated by our own Gracie Pfost, along with several others.

Please use this letter if you can to register my protest to same. Since both sides were heard by the Federal Power Commission, I am willing to abide by their decision. Let's hear the technical facts and go from there.

Sincerely,

MRS. VALDA CAMPBELL.

STATE OF IDAHO,
HOUSE OF REPRESENTATIVES,
Boise, July 5, 1955.

Statement of W. M. Frome, representative from Fremont County, Idaho, House of Representatives, St. Anthony, Idaho; present to the Committee on Interior and Insular Affairs:

We the people of Fremont County are very much and rightly so concerned about our water rights if the proposed Hells Canyon Dam is constructed.

We are very much opposed to the construction of this Federal project until the people of Idaho are assured without a question of a doubt that our water rights will be fully protected now and in the future.

W. M. FROME.

IDAHO WOOL GROWERS ASSOCIATION,
Boise, Idaho, June 10, 1955.

Hon. HAMER BUDGE,
House Office Building, Washington, D. C.

DEAR REPRESENTATIVE BUDGE: On March 31 we wrote you in reference to our opinion of legislation proposing the federalization of water and power rights as proposed in the Hells Canyon Dam.

We understand that hearings will soon be held on this legislation. We would like to have you make of record the opposition which has often been taken by Idaho woolgrowers, all of whom are owners of farmlands, rangelands, and grazing rights, that they are opposed to Government intervention in the development of downstream water until all necessary water requirements upstream have been fully utilized and adjudicated.

We thank you for your assistance in having this position placed into the record of hearings.

Yours very truly,

M. C. CLAAR, *Secretary.*

MILLER BROS. CO.,
St. Anthony, Idaho, July 8, 1955.

To Whom It May Concern:

We are engaged in the grain business in the agriculture district of eastern Idaho on the headwaters of the North Fork of the Snake River and our interests are in agriculture above any other interests.

We are absolutely opposed to any downstream high dam storage on Snake River which would naturally cancel out any upstream development.

Snake River water is a natural resource of Idaho and should remain in the powers of Idaho for its future development; this water should not be given to a power development to benefit the States of Oregon and Washington, who have absolutely no rights to this water.

Respectfully,

F. C. STURDEVANT, *President.*

BOISE, IDAHO, *April 8, 1955.*

Hon. HAMER H. BUDGE,
United States House of Representatives,
Washington 25, D. C.

DEAR CONGRESSMAN BUDGE: I am writing to let you know I am in favor of the Idaho Power building three low dams instead of the Government building the high dam.

I hope this letter and my opinion will help get results.

Sincerely,

MRS. MYRL C. O'VERY.

BOISE, IDAHO, *March 31, 1955.*

Hon. HAMER H. BUDGE,
United States House of Representatives,
Washington, D. C.

DEAR CONGRESSMAN BUDGE: I am writing to express my feeling on the Hells Canyon issue, with the hope that you in turn will reveal the opinions of the Idaho residents to the Hells Canyon committee.

I would certainly disapprove the Government building the high dam when the Idaho Power Co. is ready and able to develop the area. The private enterprise would be of no expense to we taxpayers here and across the Nation. I also feel our national debt is at a limit and that we should not make such a tremendous expenditure as the Hells Canyon Dam would involve. The private enterprise would provide an extremely sizable tax revenue to the State of Idaho—a necessity with our sparse population in order that we might develop more rapidly. Not only will Idaho as a State benefit from the taxes paid, but our Government will also receive a sizable tax income.

The power derived from the low-head dams would serve to develop our own Snake River area instead of siphoning the power to distant coastal areas. We should as a Nation scatter our manufacturing in many areas with the atomic wars a possibility. The coastal areas are already developed to be top enemy attack areas. It would be very crippling to the Nation if any attack should fall against these developed coastal areas.

We in Idaho have a terrific reserve of natural resources which should be developed for our defense and industry. One big dam would flood many of the natural deposits in its huge reservoir. The Government has already established power projects in Washington and Oregon—why should we in Idaho give up our growth possibilities to these overdeveloped areas?

Our Government has a very poor record of completing projects within the estimate given to Congress. Most of the projects have amounted to double or triple the original estimate. This means Hells Canyon Dam could reach the billion-dollar mark. Private enterprise must live within its budget; their pocketbook is not without a bottom as Uncle Sam's seems to be. Their past projects have not varied more than 10 percent of their estimates. Time is also of importance to all of us. The smaller dams could be completed (all 5) in less than one-third of the time required to build 1 big dam. As far as the amount of power derived with either development, there would be no difference. A given amount of water falling a given distance through turbines will produce the same amount of power whether at one dam or at several.

We shall never beat communism abroad by spending and taxing ourselves into socialism here at home.

I ask you to please cast your vote against the Hells Canyon Dam project and vote to let the Idaho Power Co. develop the area with the multiple low-head dams.

Sincerely,

CECIL C. TAYLOR.

FIRST SECURITY BANK OF IDAHO,
St. Anthony, Idaho, July 6, 1955.

To Whom It May Concern:

I should like to go on record opposing the Hells Canyon project for the following reasons:

1.Water is a natural resource of Idaho and I feel we should supervise the allocation of the water rights here.

2. The upper streams should utilize all the water they can before projects for the lower streams should come into existence.

3. I think we should develop our own resources before developing the resources for another State.

4. We have the soil and water. Let's use them for our own people.

5. We in this area do not wish to lose control of our own water.

(Signed) LANE L. WILCKEN, *Manager.*

BOISE HEATING & EQUIPMENT CO.,
Boise, Idaho, April 30, 1955.

Representative HAMER H. BUDGE,
Member of Congress, United States House of Representatives,
Washington, D. C.

DEAR CONGRESSMAN BUDGE: I understand that a hearing will be held in the House soon on bills Nos. 4740, 4739, 4730, and 4719, proposing the construction of a high dam at Hells Canyon to be built with Federal funds.

In addition to the many other good reasons that I feel this dam should not be built, I submit two outstanding in opposition to such a project:

First. A large single dam would be the object of and one highly vulnerable to atomic attack, and its destruction, with the release of the impounded waters, would do untold damage to the country below. If three low-head dams were built on the Snake, the target would be considerably reduced and damage by bombing more readily repaired, with the result that the plant could be put back in service in a short time.

Second. With the present shortage of power in the Northwest, it is important that additional power be made available at the earliest possible date. This can be had in 3 years if approval is given for building the 3 low-head dams, whereas the Hells Canyon Federal dam would require 8 years to complete.

When the time comes to express your views at the hearing, I do hope that you will stress the above points, as I believe they are most significant.

Very truly yours,

REUBEL E. SMITH.

THE SALT LAKE CITY HARDWARE CO.,
Boise, Idaho, June 13, 1955.

Hon. HAMER BUDGE,
House of Representatives, Washington, D. C.

DEAR SIR: We want to go on record as opposed to the building of Hells Canyon Dam, known as the high-head dam, by the Federal Government.

We feel that the information that has been put out to date and proposal made to construct this high-head dam will bring serious injury to the water rights of the people of the State of Idaho and future agricultural development and expansion in our State.

We in Idaho depend primarily upon agriculture for our main livelihood. It is very important that these birthrights of the people of the State of Idaho not be given away now or at any time in the future. As far as power requirements for the Northwest are concerned, there are many other locations downstream on which these dams can be built.

We feel that the large majority of the financial support in behalf of the proposed Hells Canyon Dam has come from people and organizations and organized labor from without the State who do not have the interests of the Idaho citizens and their future at heart. Evidence covering this should be definitely established in the committee hearings. At no time has southern Idaho ever been short of power load. Sufficient expansion for the future and development of this State is available from low-head-dam construction to further future industrial development and growth that might come to this great State.

We, the Salt Lake Hardware Co., who depend upon agriculture, logging, and mining, and supplying their needs for our livelihood, are anxious to go on record against the proposed high-head Hells Canyon Dam.

Respectfully submitted.

H. PAUL MILLS,
Boise Division Manager.

STATEMENT OF THE ABERDEEN LOCAL FARM BUREAU, ABERDEEN, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

We, the members of the Aberdeen Local Farm Bureau, wish to make our position clear concerning the development of the Hells Canyon area of the Snake River.

We are vitally concerned for our irrigation rights, and we believe that the State of Idaho should have control of water rights in Idaho.

Private enterprise is the main source of the tax structure in Idaho, and we favor development of our natural resources wherever practical and feasible by private enterprise.

We believe that, regardless of developmnt of Hells Canyon, all present and future upstream water rights on the Snake River and Snake River drainage should be rigidly protected.

We favor abiding by the decision of the Federal Power Commission in this matter.

ED PHILLIPS, *Chairman.*
GORDON TOEVS, *Vice Chairman.*
F. D. WESTOVER, *Secretary-Treasurer.*

STATEMENT OF THE ABERDEEN-SPRINGFIELD CANAL CO., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

The Aberdeen-Springfield Canal Co. hereby reaffirms its position in the matter of a Government-built Hells Canyon Dam. This company is charged with the responsibility of delivering irrigation water to 63,000 acres of land and for this reason we are unalterably opposed to any river-development program that will in any way jeopardize or interfere with our established water rights. As we see it, the Government-built Hells Canyon Dam would be strictly a power dam and no benefits would be realized for irrigation anywhere. We think that irrigation should be a primary consideration in any Federal expenditures and that dams should be built upstream as far as possible. The proposed high dam at Hells Canyon would be situated below any Idaho irrigation project and that any water impounded there would have no use as far as Idaho irrigation is concerned.

If any development is made in this stretch of Snake River, it should be done as economically as possible, as soon as possible and so as to protect all interests concerned. There is now pending an application to develop a series of dams along this region by private enterprise—not taxpayers' money—under the jurisdiction of State laws which protect the interests of the holders of water rights on the river. Private development can begin developing the river would immediatly and would supply much needed power many years sooner than the Government-built high dam. Private development of the river would return many millions of dollars annually to Federal, State, and local governments while the Federal plan would pay no taxes. The application for development of this part of Snake River by private enterprise is now in the hands of the Federal Power Commission after hearings in which everyone was heard. We believe that Congress should wait for the decision by this Commission.

The people under the Aberdeen-Springfield Canal Co. project are dependent on agriculture for a living and irrigation water is the lifeblood of agriculture. We are strongly opposed to the Government-built Hells Canyon Dam which will jeopardize the lifeblood of the people in this area.

T. S. VANDERFORD, *Vice President.*

RESOLUTION OF THE ABERDEEN CHAMBER OF COMMERCE, ABERDEEN, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, AT BOISE, IDAHO, APRIL 4, 1955

Whereas we believe that the State of Idaho does have and desires to maintain State constitutional privileges regarding existing and future water laws in the State of Idaho, and

Whereas we believe that additional water rights will be needed in the future for vast areas of presently nonarable land in Idaho, and

Whereas regardless of the development of Hells Canyon present and future upstream rights in the Snake River and Snake River drainage should not be jeopardized, and

Whereas we believe that future development of industry in Idaho will depend upon additional power development through our natural resources in Idaho, and

Whereas we believe that economic justice can best be won by freemen through free enterprise; be it

Resolved, That all water and water rights in the Upper Snake River and Snake River drainages be controlled and regulated through rights of Idaho State constitution; be it further

Resolved, That evidence accumulated by the Federal Power Commission be used as authority for development of Hells Canyon Dam; Be it further

Resolved, That since private enterprise is the main source of building tax resources in Idaho we favor private development of Hells Canyon dams wherever feasible and practical.

RONALD ENSIGN, *President.*
MARVIN LINSCHEID, *Secretary.*

STATEMENT OF ALPHA GRANGE NO. 368, CASCADE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

The interests of the people of Idaho will be benefited to a greater extent should private enterprise be granted permission to develop the power of the Snake River as opposed to the Federal Government building Hells Cayon Dam, while at the same time the interests of the people of other States will not be encroached upon.

Further, it is our belief that to safeguard the free and democratic form of government which we so highly prize, private enterprise should be allowed to function whenever possible.

DAN JONES, *Master.*
LUCILLE LLOID, *Secretary.*

STATEMENT OF VARD W. MEADOWS, REPRESENTING THE AMERICAN FALLS, IDAHO, CHAMBER OF COMMERCE, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

My name is Vard W. Meadows and I appear at this hearing on behalf of the American Falls Chamber of Commerce.

American Falls is located in Power County in southeastern Idaho, and our county's economy is based largely upon farming and ranching. Many of our farms are absolutely dependent upon irrigation water, either pumping or gravity, to provide the necessary means for making our farms productive. Many of the members of our chamber are engaged in farming or allied work, and all of us, since we are in business in an area primarily dependent upon farming for its revenue, are intensely interested in the welfare of our farms and rural area.

Our members and the people of our area are opposed to the bills that have recently been introduced in Congress seeking to authorize construction of a Federal dam at Hells Canyon, and our opposition is based upon several reasons.

First: We opposed the bills introduced in prior sessions of Congress because of a real and active fear that the passage of such bills would place in jeopardy the water rights to which our area is absolutely dependent upon in order to produce a livelihood. We do not feel that the danger is alleviated or removed by the present bills, and we therefore oppose them as we did the former. Our people know that their water rights are protected under the law of the State of Idaho but they do not believe that if their water rights become subject to the control of Congress they will then be adequately protected.

Second: Our members are further opposed to the present bills since they represent an attempt to place before the Congress an issue and an ideology that was presented on several previous occasions and rejected by a bipartisan vote by the House Committee on Interior and Insular Affairs.

Third: The Idaho Power Co. has pending applications before the Federal Power Commission to develop the Hells Canyon stretch of the river, and our members believe that the Federal Power Commission should be allowed to make a determination with respect to these applications and the proper method of developing the river.

Fourth: We believe that where, as in this instance, there is private company ready, willing, and able to proceed with a plan that will develop the river that they should be allowed to proceed, and that the Federal Government should not attempt to usurp this development at a cost of approximately one-half million dollars to the taxpayers. Accordingly, our chamber of commerce has passed the following resolution and they asked that I present it at this hearing for the record to clearly indicate the opposition that we in the American Falls Chamber of Commerce have to the Hells Canyon bills:

Whereas certain bills were introduced in the Congress of the United States on March 8, 1955, seeking to authorize construction of a Federal dam at the Hells Canyon site on the Snake River; and

Whereas the passage of any one of these bills would place in jeopardy the water rights of the farmers and irrigators of the Snake River, which water rights are vital to the economy and welfare of southern Idaho; and

Whereas the Idaho Power Co. has pending before the Federal Power Commission applications to develop this same portion of the Snake River, which development would be subject to State water laws; and

Whereas it is in the best interest of the Nation to allow private enterprise to develop those areas in which private enterprise has indicated a desire and readiness to proceed with a comprehensive plan of development; and

Whereas in these days of high national expense for defense and other causes the moneys of the Federal Government should not be used in a place and for a development which can be financed by private capital: Now, therefore, be it hereby

Resolved, That the Chamber of Commerce of American Falls, Idaho, is opposed to the passage by Congress of any bills authorizing the construction of a Federal dam at Hells Canyon.

STATEMENT OF E. D. VINCENT, AMERICAN FALLS RESERVOIR DISTRICT NO. 2, GOODING AND LINCOLN COUNTIES, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Whereas the American Falls Reservoir District No. 2, an irrigation district of the State of Idaho, comprising 98,450 acres of land situate in Gooding and Lincoln Counties, is vitally interested in the preservation and protection of the water rights and priorities of such district and its members and users, which water rights include rights in the flow of Snake River by virtue of the fact that said district is the owner of four-seventeenths of the storage space in American Falls Reservoir, situate near American Falls, Idaho, and also is the owner of a natural-flow right in the Snake River; and

Whereas H. R. 4740 of the 82d Congress of the United States, being a bill to authorize the construction, operation, and maintenance of the initial phase of the Snake River reclamation project by the Secretary of the Interior, commonly known as the Hells Canyon bill, has come to the attention of this district, and after careful consideration this district has determined that said bill is not for the best interests of this district, its users, and those similarly situated, that said bill will seriously jeopardize and permanenly injure this district's water rights in the Snake River and its tributaries, that it is contrary in many respects to the basic constitutional provisions and water laws and traditions of the State of Idaho, and if adopted will result in a radical and dangerous departure from long-prevailing and satisfactory irrigation practices by which valuable real property values have become fixed, and under which thousands of settlers and landowners by years and years of hard labor and the expenditure of substantial sums of money have established their homes and properties; and

Whereas said bill will tend to further burden with nongovernmental functions a Government whose efficiency and effectiveness are already seriously hampered

by such activities, and will deprive private citizens of the United States of the privilege of carrying on said work and business: Now, therefore, be it

Resolved, That it is the unanimous consensus of opinion of the board of directors of the American Falls Reservoir District No. 2, at its regular meeting held at Gooding, Idaho, March 4, 1952, that it is opposed to the United States or any of its bureaus proceeding as contemplated by said bill, H. R. 4740; and be it further

Resolved, That copies of this resolution be given to the press and sent to the Idaho congressional delegation.

STATEMENT OF THE AMERICAN FALLS FARM BUREAU, OF AMERICAN FALLS, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

We fully support the 1955 policies of the Idaho Farm Bureau Federation and the American Farm Bureau Federation pertaining to the development of water resources for electric power production, for irrigation, and for flood control. Namely, that the entry of the Federal Government into these projects should be restricted to those instances where private enterprise, either by cooperatives or by noncooperatives, is unwilling or unable to do the job.

We oppose the socializing of electric power and the Federal domination of water-resource development because they are against the American system of free enterprise. The primary duty of the State and Federal Governments in these projects is to protect the irrigation rights of farmers. State governments should provide legislation to require that private power utilities assume responsibility for the adequate development of power facilities and to regulate retail and wholesale kilowatt rates in a nondiscriminatory manner.

It is also our stand that the 19,000 pages of testimony already presented before the Federal Power Commission is adequate and complete enough for them to render a decision on the Hells Canyon issue. Any further meetings for the purpose of procuring additional testimony is repetitious and a waste of tax dollars.

ROY E. TAYLOR, *Chairman.*

STATEMENT OF E. G. GOODING, PRESIDENT, AMERICAN FALLS RESERVOIR DISTRICT NO. 2, GOODING, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Whereas the American Falls Reservoir District No. 2, an irrigation district of the State of Idaho, comprising 98,667 acres of land situate in Gooding, Jerome, and Lincoln Counties, and embodying more than 1,000 farm families and several urban communities, the larger communities being Gooding with a population of 3,080, Shoshone with a population of 1,500, and Richfield with a population of 400, is vitally interested in the preservation and protection of the water rights and priorities of such irrigation district, which water rights depend largely upon the waters of Snake River, such district owning four-seventeenths of the storage space in American Falls Reservoir, situated in the Snake River at American Falls, in addition to a natural flow right in Snake River; and

Whereas said district and its inhabitants have invested very large sums in acquiring their water rights and irrigation system, which investments, in addition to the original outlays for a Carey Act system and other investments, include the more recently contracted for purchase of said interest in American Falls Reservoir and the construction of an expensive canal 40 miles in length in order to bring the waters in Snake River to the project, such more recent expenditures totaling $6,685,200, of which more than 50 percent has been repaid, with the net result that many pioneer families have their life's work and savings invested in said project, and are therefore most vitally concerned with the welfare of the district and the protection of its water rights and

Whereas after careful consideration this district has determined that a high Hells Canyon Dam is not for the best interests of this district, its users, and those similarly situated, that said type of dam will seriously jeopardize and permanently injure this district's water rights in the Snake River and its tributaries, that it is contrary in many respects to the basic constitutional provisions and water laws and traditions of the State of Idaho, and if adopted will result in a radical and dangerous departure from long-prevailing and satisfactory

irrigation practices by which valuable real property values have become fixed, and under which thousands of settlers and landowners by years and years of hard labor and the expenditure of substantial sums of money have established their homes and properties; and

Whereas the major source of the district's irrigation water is from the Snake River, therefore the district is especially interested in the preservation and proper utilization of the waters of Snake River, and strongly urges that the power possibilities on Snake River should be developed by private interests which are able, ready, and willing to do so, since in case of such development our district is capable of protecting and preserving its very costly and very valuable prior rights and heritage for future generations—whereas if the Hells Canyon Dam be built by the Government it is conceivable that the priority of our water right may be permanently or irreparably damaged: Therefore be it

Resolved by the President and Board of Directors of American Falls Reservoir District No. 2. That such district again expresses its positive and forceful opposition to the United States proceeding with the construction of the high Hells Canyon Dam.

Dated at Gooding, Idaho, March 31, 1955.

(Signed) E. G. Gooding,
President.

Attest:
[SEAL]

Lurlene Estabrooks,
Secretary.

Statement of Ashton Local of the Idaho Farm Bureau Federation, Ashton, Idaho, Presented to the Subcommittee of the Senate Committee on Interior and Insular Affairs in Boise, Idaho, April 4, 1955

At a regular meeting of the Ashton local of the Idaho Farm Bureau Federation it was voted unanimously that this body go on record as opposing the Government building the Hells Canyon Dam on the Snake River at or near the Idaho-Oregon line.

We feel that private capital is available, ready, and willing to develop the water resources of the Snake River at this point.

Martin J. Bergman, *President.*
Robert I. Rankin, *Secretary.*

Statement of John Baldridge, Electrician, Payette, Idaho, Presented to the Subcommittee of the Senate Committee on Interior and Insular Affairs at Boise, Idaho, April 4, 1955

The production and use of electricity is of intense concern to me as a citizen of our Nation; as a lifetime resident of Idaho; and, as a business whose object is to enable our customers to utilize electrical energy, regardless of by whom produced.

I would like to make the occasion of the April 4 hearing at Boise, Idaho, to urge you to consider it your duty to aid in an early decision on the matter of a dam or dams on the lower Snake River. It is contrary to the best interests of our area and our Nation to subscribe to further delay a decision.

The construction of a large, high dam, which preempts water rights upstream is not in the best interest of people in the Snake River area; and our whole country must suffer to the same degree that this area would suffer from ill-advised tactics, designed to impose upon us political theories which are contrary to our beliefs.

Statement of George Baxter, Baxter & Co., Buhl, Idaho, Presented to the Subcommittee of the Senate Committee on Interior and Insular Affairs in Boise, Idaho, April 4, 1955

My name is George Baxter. I am in the real-estate business in Buhl, Idaho. I am attending this meeting as a citizen of Idaho and also have been authorized to present a protest voiced by the Buhl Chamber of Commerce which was passed at our meeting Monday, March 28. I shall read that protest a little later.

In about the year of 1937 or 1938 I attended a hearing at Pocatello, Idaho, on the CVA something like this hearing, and at that time I testified that I thought the Government should develop the power and distribute it. But I realized later I had been very badly misinformed. I believe the facts have been brought out at the year-long hearing conducted by the Federal Power Commision. The legal staff of the Federal Power Commission has recommended that it be done by a private company, and I heartily agree. A private company would not be allowed to interfere with the upstream water rights, which is so essential to the development of the State of Idaho.

The dams, if constructed by a private company, would bring in a lot of tax money and they would be compelled to help us pay a part of the taxes that is bearing on us so hard. I feel this hearing is a gross waste of the taxpayers' money and the individual's time and gasoline to come to it because it is being held out of the region which will be the most affected by it.

The hearings conducted as they are at Lewiston, Pasco, and Portland does not give a true consensus of opinion of the people in the area.

I now wish to present the protest from our Buhl Chamber of Commerce.

STATEMENT OF ALVIN B. BENSON, MELBA, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I have been pumping water for irrigation from Snake River for the past 11 years; in 4 of those years the river has been low enough that we have had to lower the inlet to our pump.

It would seem only commonsense to utilize the same head of water through three low-head dams, rather than piling it all up behind a high dam at once, in Hells Canyon.

This, coupled with the higher cost of the high dam and its accompanying loss of tax revenues, make me opposed to the high Government dam at Hells Canyon.

STATEMENT OF FRED W. BENNETT, MOUNTAIN HOME, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOIS, IDAHO, APRIL 4, 1955

As a lifetime resident of Idaho, owning and operating farms and livestock in the Snake River Valley, I am opposed to the United States Government development of Hells Canyon.

It just does not make sense for the Federal taxpayer to spend $500 million for Hells Canyon Dam when a private electric company like the Idaho Power Co. is ready and willing to build all the power facilities needed, using private venture money.

STATEMENT OF J. G. BICKMORE, OF POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

As an individual I have always been taught that the free-enterprise system was one of the main factors in the phenomenal growth and development of the United States. Therefore, the proposal that our Government should construct a high dam in Hells Canyon is in opposition to such thinking and I am greatly opposed to that plan. Businesswise, it seems foolish to me that the issue of public versus private power would even be considered, since the former would result in increased taxation to the public. Under the latter plan, private capital would construct three low-head dams and ultimately, the Government would benefit through taxes paid by private industry.

Since all of the facts have been given to the Federal Power Commission, that body should be permitted to make a determination as to which resource development plan would best fit the public interest. This decision should be made before

any further action by the Congress concerning the now political issue of public versus private power.

As a private citizen, I am unalterably opposed to further encroachment by the Government into private enterprise.

RESOLUTION OF THE BOARD OF DIRECTORS OF THE BINGHAM COUNTY FARM BUREAU, REPRESENTED BY ROBERT SASSER, CHAIRMAN, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

During the regular monthly meeting of the board of directors of the Bingham County Farm Bureau, held March 28, 1955, the following resolution was unanimously passed by the Board with all locals fully represented:

Resolved, That we the Bingham County Farm Bureau refer to our original resolution on the Hells Canyon issue. Also to request that the Idaho congressional delegation use all effort and influence to see that the findings and decisions of the Federal Power Commission remain in the hands of said Power Commission, since it was established to have such power and handle these issues in a proper and economical manner thus abolishing further expense for future discussions and hearings.

ROBERT SASSER, *Chairman.*

STATEMENT OF E. DUANE BINGHAM, EMMETT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Statement by E. Duane Bingham before the Senate Subcommittee on Reclamation at Boise, Idaho, April 4, 1955. I am chairman of the national affairs committee of the Gem County Farm Bureau, whose membership is in excess of 460 farm families.

The county farm bureaus are federated members of the State Farm Bureau. The county farm bureaus are the originating group for all State resolutions. Each resolution must not only originate in a county, but must be passed by a majority of that county membership. Then the resolution is presented to the State convention to be voted upon by representatives from every organized county in the State federation. Upon passage, the resolution becomes policy for the State federation. Any county not wishing to concur in the State policies can secede their membership and cancel their contractual agreement by written notice to the board of directors. Our resolutions are reaffirmed from year to year, unless they are supplanted or changed by new resolutions.

In 1952 our resolutions read: "Whereas Hells Canyon is not a reclamation project; is not a flood-control project; and complete flood control on Snake River above Hells Canyon, can be accomplished by the addition of 2 or 3 upstream dams already investigated by the Bureau of Reclamation, and these dams would impound floodwater for future reclamation."

Whereas private capital is ready and willing to develop power in the lower Snake River Valley, and taxes would be paid rather than expended on such development; and the economy of our Nation is and always has been based on the freedom of private enterprise to develop our natural resources, unhampered by Government competition and interference.

Therefore, be it resolved; that we go on record opposing Hells Canyon Dam.

In 1953, we resolved: Whereas it is the consensus of opinion that Hells Canyon will be developed in the near future, either by private enterprise or by the Federal Government, and

Whereas the project is primarily a power-production project, and

Whereas we as farmers having our investment in irrigated land and depend upon this land for our income, fear that we might lose some of our present or future water rights because of the development of Hells Canyon; be it therefore

Resolved, That Congress completely protect our present and future water rights against any infringement.

In 1954, we reaffirm our previous resolutions and resolve:

Whereas Farm Bureau has long resisted the centralization of Government and the present trend to give the Government more authority, which in our opinion, will in a few short years take away our free-enterprise system; be it

Resolved, That the Idaho Farm Bureau aggressively support the development of our natural resources by private enterprise when practical or feasible, and also

We recommend to the State of Idaho and the Federal Government a policy of storing water in upstream areas rather than by large downstream dams.

Our policy is not always against Federal projects, but we feel that they should be used only where private capital, local government, or interstate compacts are unable or unwilling to develop our natural resources for the best interests of the local citizenry. I wish to thank you for the opportunity of appearing and presenting the opinion of membership.

STATEMENT OF THE BLACKFOOT CHAMBER OF COMMERCE, OF BLACKFOOT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, AT BOISE, IDAHO, APRIL 4, 1955

We understand that hearings on whether Hells Canyon should be developed by the Federal Government or private enterprise have been completed before the Federal Power Commission which is expected to hand down a decision some time this year.

We also understand that several bills (S. 1333, Morse; H. R. 4719, Pfost; H. R. 4730, Green; H. R. 4739, Magnuson, and H. R. 4740, Metcalfe) have been or will be introduced before the Senate and the House. It would appear that these bills could have considerable bearing on the operation of the Federal Power Commission.

In view of the fact that the Federal Power Commission was set up for the purpose of making decision such as that involved in the Hells Canyon question, we firmly believe that the ultimate decision should be left entirely in the hands of the Commission and that such legislation should be defeated.

This is in line with action taken by the Blackfoot Chamber of Commerce in March of 1952, when our membership by a large majority, objected to the Federal construction of a high dam in Hells Canyon. We still believe that the Nation cannot afford construction of such a dam; that a Federal dam cannot be operated as economically as it can by private enterprise; that Federal control of power and water jeopardizes States rights; that we can ill afford to lose the taxes private enterprise would pay if it developed Hells Canyon and which is definitely not paid by Federal agencies of similar nature; and that above all, Federal construction and operation of Hells Canyon is one more step in the direction of a socialistic trend which can only lead to the destruction of free enterprise and the American way of life if allowed to continue.

HUGH TUOHY,
President.
ELMER TAYLOR,
Chairman, National Affairs Committee.

STATEMENT OF J. B. BLACKHURST, MANAGER, BANNOCK TITLE ABSTRACT CO., POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am very much opposed to the Federal Government building the Hells Canyon Dam on the Snake River for the following reasons:

I feel that the waters of the Snake River and its tributaries are very important to the economy of the entire State of Idaho, and I hate to see it tampered with in any way.

For the further reason that I am very definitely opposed to the Federal Government in business and think we have gone too far socialistically already.

For the further reason, I am not in favor of the Government spending more tax money when we are already so heavily in debt and there is plenty of private money ready and available for this type of utility.

And finally for the reason that we should wait for a decision from the Federal Power Commission on their investigation.

STATEMENT OF SENATOR ADAM H. BLACKSTOCK, STATE SENATOR OF OWYHEE COUNTY, MARSING, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I wish to voice my opposition to a high dam at Hells Canyon to be built at Government expense.

Privately owned utilities operate much more efficiently, giving better service and paying taxes to help operate local units of government.

The interests of Idaho would be better served by permitting private capital to construct the three low-head dams in this area, which would generate as much power as the high dam, according to the information I have, and would not endanger upstream water rights.

I am an officer of an irrigation district which pumps water from Snake River and can state that the Snake River has not had any extreme fluctuation in recent years, although some years the flow has been lower than average.

Better utilization of this flow can be made by the proposed three low-head dams, in my opinion, and construction of the same should be authorized as soon as possible.

STATEMENT OF THE BOISE CHAMBER OF COMMERCE, BOISE, IDAHO, PRESENTED AT THE HEARING OF THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS HELD IN BOISE, IDAHO, ON APRIL 4, 1955

A RESOLUTION

Whereas, in April, 1952, the members of the Boise Chamber of Commerce expressed by an overwhelming referendum vote, its opposition to the construction of the Hells Canyon Dam by the Federal Government, as then proposed by H. R. 573; and

Whereas certain United States Senators have introduced on March 8, 1955, a new bill known as S. 1333, in the Senate of the United States, proposing the same, or nearly the same legislation; and

Whereas there appears to be no substantial change of conditions affecting the proposal and reasons for the opposition of the Boise Chamber of Commerce to such legislation, and whereas a committee of the United States Senate intends to order a public hearing at Boise, Idaho, on April 4, 1955, for the purpose of obtaining an indication of public feeling and sentiment with regard to such proposed bill: Now, therefore, be it

Resolved, That David Doane be, and he is hereby authorized and directed to appear at such hearing and present the following statement for and on behalf of the Boise Chamber of Commerce:

"The Boise Chamber of Commerce is unequivocally opposed to S. 1333 now pending before Congress, such opposition being upon the following grounds and for the following reasons:

First. We are not satisfied that it is necessary for the Federal Government to build a dam in order to realize the full development of the Snake River and its tributaries. It appears that the Idaho Power Co., a private utility, has for several years had its application filed with the Federal Government for permission to construct three low-head dams in the Hells Canyon area to furnish hydroelectric power, and that such company is financially and technically equipped to accomplish such construction and produce the resulting electric power. The proposal of S. 1333 seems to us to be nothing more than an attempt on the part of the Federal Government to invade the power business under the guise of public welfare and constitute an unreasonable interference by Government with private enterprise.

Second. If such proposal becomes law, we are fearful that the Federal Government would then have an instrumentality whereby it could and would exercise control of the Snake River and every little stream, creek, and ditch within the State of Idaho, which could be classified as a tributary. We believe such control would jeopardize and interfere with and endanger the water rights of the Idaho farmers in southern Idaho, whose activities constitute a very vital part of the economy of this State. Such control would also retard and prevent industrial development that by necessity depends on the dual use of the same water resources. There is already too much control by the Federal Government and we do not care to encourage more.

Third. Should the Federal Government accomplish the construction of Hells Canyon Dam, as proposed by S. 1333, we believe that the taxpayers' money

would be expended for excessive costs of construction, and that the project would result in no material source for revenue by means of taxes at the local, State, and Federal levels. While, if private enterprise were permitted to accomplish the proposed project, a tremendous tax source would be available to the counties, and the States of both Oregon and Idaho.

Fourth. We adhere to the proposal that the Government should not do or attempt to do what the people should and can do as well for themselves. We are not believers in the socialistic philosophy of government. We believe that S. 1333 is another dangerous step toward the socialization of our Nation.

Approved and adopted by the board of directors of the Boise Chamber of Commerce this 30th day of March 1955.

ROY G. MAXEY, *Vice President.*

Attest: EARL C. REYNOLDS, *Manager.*

I hereby certify that the above and foregoing resolution is a direct and correct copy of the resolution adopted by the board of directors of the Boise Chamber of Commerce on the date above indicated.

EARL C. REYNOLDS, *Manager.*

STATEMENT OF L. E. BOLT, MAYOR, CITY OF EMMETT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

This letter is written to you as mayor of the city of Emmett, Idaho, and it is strictly a personal comment since limitations of time do not permit an official expression of our city council. I am confident they would concur in my expression at their first opportunity.

I am definitely opposed to a high Federal Hells Canyon Dam on the Snake River. The reasons for this opinion are numerous but basically it is founded on a sincere belief that free enterprise should be encouraged when it is ready, willing, and able to do the job. The Idaho Power Co. meets these qualifications and merits our confidence.

Also, I am a fruit farmer as well as local manager of the Hogue Packing Co., Emmett, Idaho, and I am personally acquainted with the priceless value of water. I am thoroughly convinced that our Idaho irrigation water rights would be placed in jeopardy with a Federal dam in the Snake River. Various precedents over the United States substantiate the superiority of the Federal Government, even over State irrigation water rights, when conflicting interests of the Federal Government and the State's arise. There is no sound or just reason to imperil Idaho irrigation water rights merely because Hells Canyon has become a political pawn.

The schedule of hearings established by your subcommittee seem to be devised to hear the political and economic interests of Washington and Oregon, rather than the down-to-earth feelings of the Idaho dirt farmers. The southern Idaho farmers have a tremendous stake in this controversy and they should be given ample opportunity to be heard at the grassroots level. A short session at Boise, Idaho, certainly does not provide an opportunity for the southern Idaho farmer to be adequately heard.

STATEMENT OF ROY L. BOYER, GOODING, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, IDAHO, APRIL 4, 1955

I would like to go on record as being opposed to the Federal Government building a dam at Hells Canyon, for the following reasons.

Contrary to the statements of the proponents of this bill our water rights could not be called safe and secure, because being a Federal project any clause or clauses could be wiped out at any time by Congress. We all know that most of the power generated from this project would go to Washington, Oregon, and northern California. In the event of a shortage of water, to the point where irrigation here in southern Idaho would have to be cut short or else the generators at this project be cut out or partially cut out, what chance would we in southern Idaho have, we being politically insignificant compared to the much greater population supplied electricity by the generators of Hells Canyon?

I do not feel that the Government should infringe on any business, or go into competition against any business or private enterprise. Competition is a wonder-

ful and often a valuable thing but not when it comes from the Federal Government.

As long as private enterprise stands ready, able, and willing to do the job, I cannot see where our Government can possibly justify themselves for spending millions of the taxpayers' money on this same project. Those projects which are multiple in character, those that are primarily for irrigation, and flood control, and to which the generation of electricity is only incidental, are the ones the Government should build. Hells Canyon is not such a dam. The irrigation benefits from it are negligible, and it is entirely in the wrong place for flood control. It is primarily a project for the generation of hydro electricity.

My dictionary defines communism as "the doctrine of the common ownership of the means of production." Common ownership is, of course, Government ownership, because our Government is our common representative, and hydro electricity is most certainly a means of production. Therefore, in view of the fact that we are fighting communism, and at a great expense, all over the world, I think our Congress could well adopt the slogan "less government in business and more business in government," and let such monstrosities as Hells Canyon alone.

STATEMENT OF THE BUHL CHAMBER OF COMMERCE, BUHL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The Buhl, Idaho, Chamber of Commerce, an organization whose purpose is to develop the commercial, cultural, and agricultural interests of the west end of Twin Falls County, did on the 28th day of March unanimously adopt the following position regarding the scheduled hearings by the Joint Interior and Insular Affairs Committee of the United States Congress in Idaho, Washington, and Oregon to gain grassroots opinion on the proposed construction of a high Federal dam at Hells Canyon.

The Federal Power Commission has completed hearings, the longest and most complete in the history of the Commission, on the application of the Idaho Power Co. to construct three low-head dams in lieu of the high Federal dam. At these hearings all parties had adequate opportunity to present testimony and be heard. It is quite obvious the present hearings have no other purpose than to divert attention from the forthcoming decision of the Federal Power Commission.

The Buhl Chamber of Commerce voices further opposition to the conduct of the hearings in that a 3-hour hearing in Boise on the morning of April 4, is totally inadequate from the standpoint of time and location to get a true and accurate grassroots opinion of the people of the Snake River Valley. It is these people who are most directly and vitally affected by any decision regarding Hells Canyon and yet your committee would ignore that segment of people and not give them adequate chance to be heard.

Finally, as long as a Federal dam at Hells Canyon cannot guarantee the permanent water rights to the farmers in the irrigation districts in the State of Idaho unless the Constitution of the United States be amended to guarantee that States rights will not be violated, then the Buhl Chamber of Commerce does strongly oppose any construction of a high Federal dam at Hells Canyon. Water from the Snake River for irrigation in southern Idaho is the lifeblood of our economy. A high Federal dam which by constitutional right and historical Supreme Court decisions would have priority of water, would be diametrically opposed to our welfare as a State.

Respectfully submitted.

BUHL CHAMBER OF COMMERCE,
(Signed) BOYD ROLFE, *President.*
Attest: WANDA B. ELKIN, *Secretary.*

STATEMENT OF BURLEY IRRIGATION DISTRICT, BURLEY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, APRIL 4, 1955

My name is W. F. Richins. I am a farmer and my address is Route 1, Burley, Idaho. I am a member of the board of directors of the Burley Irrigation District and have been since 1938.

The Burley Irrigation District irrigates 48,000 acres of land in Cassia County, Idaho, formerly known as the pumping division of the Minidoka project which

was constructed by the United States Reclamation Service. In 1926 a contract was entered in between the United States and the Burley Irrigation District turning the project over to the water users. Besides a rural population of over 4,000 there are 2 cities on the project, the largest being Burley with a population of over 7,000. This project is highly developed and in a full state of cultivation.

The water for this project is diverted at Minidoka Dam on Snake River. A canal carrying 1,200 second-feet of water takes out there.

The water users of the Burley Irrigation District by action of their board of directors have adopted resolutions opposing the proposed Hells Canyon Dam.

The future development and prosperity of southern Idaho depends upon the full utilization for beneficial uses of the waters of the Snake River and its tributaries.

We are definitely opposed to any limitations on the future development in Idaho. In addition to our concern about future development we are concerned regarding our existing rights. We feel that these rights and the rights to be acquired are in jeopardy by this proposed project which completely omits irrigation and reclamation.

STATEMENT OF FRED E. BURGESS, VALE, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

As a private citizen I protest a high dam at Hells Canyon for the following reason. Low dams whether built by the Government or private enterprise makes but little difference, a high dam would be a shortsighted mistake.

My parents settled one-fourth mile from Snake River many years ago. In early days it was not unusual to be able to catch fish in the borrow pit of the county road. Many of the floods were caused by ice jams in the canyons and most often at low water caused by subzero weather, followed by a quick breakup. Most of earlier high-water marks no doubt were placed there by ice breakups.

Oregon's resource committee now has plans to take care of all the floodwaters above Hells Canyon in Oregon. Idaho has plans similar to Oregon.

Anyone familiar with soil and water conservation knows that the place to stop erosion is high up in the watershed. Water conservationists all know the value of these well-placed dams lying above irrigated lands. Once it has bypassed its potential use it is gone forever. This would be the case when stored in Hells Canyon.

Our underground water is constantly being drained off by pump irrigation. The only way to assure a steady underground flow is stored water that finds its way through the underground crevices from higher altitudes. Small reservoirs in the mountain areas are the only possible source of maintaining a steady flow.

The United States Department of Interior Fishery Leaflet 27 (1945), and Leaflet 17 (1951) places the value of small reservoirs and farm ponds at 200 pounds of fish per square acre of water. This is equal to most land values for food production.

In most places the land where reservoirs and ponds would be built has little or no value for farming and grazing. Why not make use of it?

It is a well-established fact that is known to all Army and reclamation engineers and persons who are familiar with water use, that 40 percent of all impounded water returns to the streambed. The other 60 percent if not used for irrigation could be released during the summer months, thus supplementing the regular streamflow in the same manner as a high dam would.

I have had 22 years' experience as an irrigation farmer, 9 of these years an irrigation district director. From this backlog of experiences I can safely say and invite anyone to prove that what I have said is not correct and feasible.

STATEMENT OF F. A. BURTON, DISTRICT MANAGER OF POCATELLO FLOUR MILLS, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Personally, and as manager of a flour mill, I have used electrical power supplied by the Idaho Power Co. since 1917. At all times we have been supplied adequate power for our needs at a reasonable rate.

We are anxious to see the Idaho Power Co. permitted to build additional power sites to meet the ever-increasing needs of southern Idaho.

We are unalterably opposed to the construction of a high dam at Hells Canyon by our Government, with tax money, when the Government is already loaded with a debt requiring almost unbearable tax to service it. The Idaho Power Co. is ready to build, with their own money and then pay taxes on the property, 3 dams which we are convinced will better serve Idaho than 1 high dam; and we believe they will have at least equal value with a high dam to the entire Nation.

Our faith in the American way of life will be materially restored if your committee can find some way to terminate the continuous delays and hearings which have delayed the construction of plants now needed for the progress of Idaho.

STATEMENT OF C. CALHOUN, BUHL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

My name is C. Calhoun, and I reside on an irrigated farm of 100 acres 2½ miles southwest of Buhl, Idaho.

I would like to present before this board my beliefs and convictions in the present controversy between the proponents of a federally constructed and operated power generating unit at Hells Canyon, Idaho, and those who believe that private ownership and operation is to be preferred.

I do not believe that the generation of electric power for the expanding industry of this area, or the so-called cheapening of power rates to the consumer is a prime factor in this bid by the public-owned-utilities advocates to gain possession of this site. I believe that the moving force behind the scenes is a determination on the part of certain political groups to place the entire economic life of certain areas in the hands of a governmental agency which could, at its will, control every phase of that area.

This is the key move which would lose to us forever the right to control and regulate the disposition of the greatest permanent natural resource within our State, the water of our rivers. Without this control by the State of Idaho the opportunity to continue development of the agricultural potential of our desert land comes to a standstill. We cannot allow the power generated by our streams or the very water itself siphoned off for the benefit of more politically powerful areas.

I do not believe in placing in the hands of our political representatives in Washington the economic life of our land. The political beliefs which are paramount in our Nation's Capital today may not exist 20 years hence. Therefore he who would place his very way of life in the hands of men who know nothing and care less about his well-being, is, indeed, building his house of straw.

The entire argument for Federal control of the Hells Canyon site is political in nature and not founded on economic facts. Therefore we must argue its merits from this viewpoint.

We dare not surrender to the unknown politician of the future those rights specifically reserved to the State by our Constitution. Our State is, and perhaps always will be, weak in political strength at our Nation's Capital. To deliver into the hands of Congress the right to regulate the domestic affairs within our boundaries is to invite the bartering away of the very lifeblood of our people.

The water flowing in our streams in Idaho is perhaps the greatest permanent asset we have. We must maintain complete control of this agricultural necessity if we are to progress in the permanent development of our State. Every drop of water which can be stored or diverted for reclamation purposes should be guarded and put to use. The developing and maintaining of the family-type farm is to preserve what is perhaps the greatest reservoir of moral and social values left in the United States today. The large corporate farming enterprise does not lend itself well to community or social betterment. The city-dwelling owners, the slum-type day laborers, do little to encourage the better rural living which is the very backbone of the American way of life. We must not let the future development of our intensely formed irrigated tracts, with their definite advantages in ownership and civic pride, be shunted aside for the furtherance of politically dominated groups.

67120—56——28

This is no longer a battle of economic principles but rather a battle between two ways of life which has been transferred to our doors.

Let us pause here to consider the vast studies taken by science in the creation of nuclear power, or perhaps we should say atomic energy, in the field of power generation. We have only glimpsed the possibilities of the future in this field. Is it not possible that by the time such monstrosities as here proposed by the advocates of public power could be brought into reality they would be as obsolete as the ox yoke or the model T Ford? I well recall men building livery stables when the streets in front of their barns were thronged with automobiles. Could not the puny minds of the backers of this measure be wallowing in the same rut?

Should we perhaps leave our streams of the future cluttered with these useless wrecks of concrete and steel while the taxpayers struggle on and on trying to pay for this monument to folly?

The difference in cost of electric power sold by a public power system and one privately operated would be negligible to the farms and small-business man of Idaho. I doubt very much if the retail price of any given article which might be manufactured in our area would be changed appreciably by supplying large blocks of industrial power at subsidized rates. The large manufacturer would indeed profit, but his selling price would be in conformity with goods produced elsewhere, and we of this area would be the actual losers through the taxes necessary to maintain these cheap rates.

If the farmer of Idaho will but turn his ear to the wind he can hear the padding footfalls of the goon squads of socialism. Look into the corners of the earth and see the sniveling creatures who were once proud nations. Whistle, if you can, your way past the graveyards of millions who placed their faith in a political hierarchy who promised utopia on earth, the abundant cost of free life. Do the slave camps of Siberia hold an attraction for you which makes you long to dispense with our American way of life?

Let us hold to these freedoms granted us by our Constitution. Once lost they can never be recovered.

STATEMENT OF CANYONSIDE GRANGE PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Canyonside Grange, Inc., No. 126, has repeatedly gone on record as opposed to the construction of a Government high dam at Hells Canyon. The Grange believes Government should not compete with private enterprise where private capital can do the job, also that there is not enough flow in the Snake River to justify such a large outlay of taxpayers' money as the high dam would require.

(Signed) ARTHUR SUHR,
Master, Canyonside Grange.

STATEMENT OF ALBERT CARLSEN, BLACKFOOT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I appreciate the opportunity to make a statement in opposition to the construction of a Federal dam at Hells Canyon on the Snake River in Idaho.

I am opposed to the project for the following reasons:

1. I am a citizen of southern Idaho, an area whose entire economy is based on our water supply. Every major ditch company, water users organization, and farm bureau in the area are opposed to the Federal Government building a power dam on the lower Snake River, which must depend on its water supply originating in Wyoming and southern Idaho. It is the opinion of the best legal minds in the area that under our Constitution, as interpreted by the Supreme Court, language cannot be written into the bill which will adequately protect our water rights. I am unalterably opposed to any program, public or private, which does not, without question, protect the water rights of the citizens of Idaho.

2. Private capital is ready and willing to develop the Hells Canyon stretch of the Snake River. The merits of the private development versus Government development are now before the Federal Power Commission for decision. Under no circumstances should Congress consider legislation for a single dam at Hells Canyon until a ruling has been handed down by the Federal Power Commission.

3. Within the next 12 months southern Idaho will be using power from a steam plant in Utah. We are in need of power now. It has been reliably reported that the first privately built and financed dam can be in operation within 18 months and all 3 dams can be completed in 38 months; whereas it is not at all certain Congress will ever authorize an expenditure of the taxpayers' money for a Federal dam at Hells Canyon, and at best many months will pass before an authorization can be obtained. If and when Congress should authorize a dam at Hells Canyon, testimony brought out at the Federal Power Commission hearings indicates that at least 6 years will elapse before any power will be generated and at least 10 years will be required to complete the project.

4. In view of the great strides made in the field of atomic energy, it is entirely possible that dams such as Hells Canyon will be obsolete before the 10 years necessary for construction has elapsed.

5. In view of the possibility of atomic warfare, just good commonsense dictates a decentralization of our powerplants and war industries to the greatest possible degree. Certainly 3 dams to control the flow of the Snake River will be much safer than 1 dam, which if struck by an atomic bomb would destroy countless lives and millions of dollars' worth of property. In addition, the war industries dependent upon Hells .Canyon power would no doubt be out of commission for years.

6. I am opposed in principle to the Federal Government going into any business in competition with its citizens, who necessarily must furnish the Government with the taxes to carry on its legitimate functions. Thank you for allowing me to present this statement.

STATEMENT OF JACK CARLTON, MELBA, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I feel that the natural resources of Idaho belong to Idaho and should be developed by free enterprise for the good of the people of our area.

I would also like to go on record as opposing the Government spending the taxpayers' money for a high dam in Snake River when private enterprise is ready and able to develop this area at a fraction of the cost estimated for a high Government dam.

Having lived on the Snake River for the past 20 years, I am well acquainted with the flow and fluctuation. The people of Idaho have greatly benefited from the progress made by private enterprise serving power to the area. I believe that further development of the area can best be made by private enterprise and that permission should be granted as soon as possible to build the three proposed low-head dams in Hells Canyon.

I believe that politics have been involved in this issue long enough.

STATEMENT OF RAMON S. CARLTON, PROPRIETOR OF CARLTON'S CAPITOL GROCERY, BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am not in favor of Hells Canyon Dam because the Government has no business being in business. Reasons: Taxes, free enterprise, and unfair competition. Why should we subsidize the power industry?

STATEMENT OF WILLIAM M. CARSON, WEISER, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

My reason for being here this morning is to register opposition to any Federal high dam in the Snake River Canyon known as the Hells Canyon area.

I have been a rancher and farmer in Idaho for 40 years, in fact I own at present 180-acre farm on the bank of this Snake River and the irrigation water comes directly from this stream.

At present I am a commissioner of flood control, district No. 3, for the Weiser River Basin. I am also a director of the sugar-beet growers association in this area.

I mention the above to advise you that I am well aware of the importance of adequate water for this upper Snake Valley.

Sometime back the Army engineers held meetings in the upper Snake regions with regard to upstream storage. To me this seems very sensible for more reasons than one; for instance, adequate irrigation water, flood control, etc. If such a program could be carried out, runoff would be limited and flood control achieved. If runoff is limited, power generation would naturally drop on any high dam and in the final analysis we would find one project conflicting with the other.

I feel confident private industry can and will develop all the power possible through their proposed program. When this is done our Northwest power grid or pool will receive as many benefits, and we in this area (Idaho and Eastern Oregon) will have adequate water for the years ahead.

STATEMENT OF THE CASCADE CHAMBER OF COMMERCE, CASCADE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

The Cascade Chamber of Commerce is in direct opposition to the Government's proposed Hells Canyon project. The members feel that this is bringing CVA in the back door instead of through the front door.

ROBERT GARDNER, Jr., *President.*
ERNIE KNEE, *Secretary.*

STATEMENT OF THE CASCADE JUNIOR CHAMBER OF COMMERCE, REPRESENTED BY HAROLD YOUNG OF CASCADE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The Cascade Junior Chamber of Commerce is in opposition to the Federal Government constructing and operating power dams in competition with or in replacement of private industry.

FREDERICK Y. THURMAN, *President.*
HAROLD YOUNG, *Representative.*

STATEMENT OF JASPER CASE, OF GLENNS FERRY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I wish to state that I feel the Government should not undertake any development that private business is willing and able to do. The Federal Power Commission has recently completed hearings to answer this problem. A private utility has applied to that body to develop the Hells Canyon area of the Snake River and I feel that their three-dam proposal will accomplish all purposes at about one-third of the cost of a high dam, with no cost being borne by the taxpayers. I also think that no congressional action should be taken until the Federal Power Commission has made its decision.

Therefore, I urge that this subcommittee do nothing that will interfere with or delay a decision by the Federal Power Commission on this matter.

STATEMENT OF CASTLEFORD GRANGE NO. 424, CASTLEFORD, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Castleford Grange No. 424 is on record opposing the building of the Government Hells Canyon Dam.

FRED W. KOCH,
Master, Castleford Grange.

STATEMENT OF CEDAR DRAW GRANGE, BUHL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

This is in answer to the Idaho-Lewis County Pamona resolution on the Snake River reclamation.

We, the Cedar Draw Grange, wish to reaffirm our previous stand that we are in favor of a private company enterprise instead of a Federal high dam at Hells Canyon. We feel reclamation rights should supersede all power rights.

LONNIE MOORE, *Master.*
DON R. HICKS,
[SEAL] Mrs. LONNIE MOORE, *Secretary.*

STATEMENT OF TOM CHAMBERLIN, OWNER OF CHAMBERLIN IMPLEMENT CO., WEISER, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am opposed to a Federal dam in Hells Canyon. Snake River is our most valuable asset for power and irrigation, and I don't want to forfeit our water rights or send our electric power to the coast, we need it here for industry.

STATEMENT OF SCOTT CLARK, CALDWELL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am opposed to Hells Canyon legislation because the Federal Power Commission has made an extensive study on the application by Idaho Power Co. for development of the Hells Canyon area and should be allowed to render a decision before Federal legislation is again sought for development of this area.

STATEMENT OF J. VERL CLUFF AND MRS. VERL CLUFF, MERIDIAN, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

We are opposed to the Government building a high dam at Hells Canyon.

POCATELLO, IDAHO, *March 31, 1955.*

HELLS CANYON INVESTIGATION COMMITTEE,
Boise, Idaho.

GENTLEMEN: I have been following the investigations of the Federal Power Commission and am convinced that the basic facts have been brought out in these hearings.

I feel that the decision of the Federal Power Commission will be for the very best developments of the State of Idaho and that this issue should not by any means become a political issue.

Yours very truly,

INTERMOUNTAIN EQUIPMENT CO.
E. A. COLLINS, *Branch Manager.*

STATEMENT OF ALEX O. COLEMAN, ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am Alex O. Coleman, a farmer and stockman of St. Anthony, Idaho. My home place consists of a quarter section of land which is irrigated by the waters of the North Fork, or Henrys Fork, of the Snake River, with supplemental water from the Island Park Reservoir of the Fremont-Madison Irrigation District.

I also operate a small farm in Madison County. The water for this acreage is provided by the Teton River which for many years has presented a serious flood-control problem in the communities through which it passes.

At the present time I am a member of the committee of nine, which regulates and manages the distribution of water for Water District 36. I am a director of the Idaho State Reclamation Association, representing the upper Snake River Valley. For the past 15 years I have been a director of the Twin Groves Canal & Irrigation Co., which furnishes the larger portion of the natural-flow water for my farm.

My entire life by choice has been devoted to agricultural pursuits. My father and grandfather were farmers and stockmen. In view of these positions, my occupation and my hereditary background, I feel that I can honestly and adequately testify before you in opposition to S. 1333, as a representative of my friends and neighbors and all others who are interested in the future welfare of the State of Idaho.

Farmers of Idaho are justly proud of the heritage given to them by their pioneer predecessors, and it is their desire to pass on to future generations these rights and privileges.

When Idaho was admitted to the Union as a State, her constitution was accepted by the Members of Congress and Senators from the 42 States of the Union. One paragraph of this constitution in particular, grants, and regulates the right of the use of water within the State. I quote: "Water being essential to the industrial prosperity of the State, and all agricultural development throughout the greater portion of the State depending upon its just apportionment to, and economical use by, those making a beneficial application of the same, its control shall be in the State, which, in providing for its use, shall equally guard all the various interests involved. All the waters of the State, when flowing in their natural channels, including the waters of all natural springs and lakes within the boundaries of the State" (I should like you to pay particular attention to this clause) "are declared to be the property of the State, whose duty it shall be to supervise their appropriation and allotment to those diverting the same therefrom for any beneficial purpose, and the right to the use of any waters of the State for useful or beneficial purposes is recognized and confirmed; and the right to the use of any of the public waters which have heretofore been or may hereafter be allotted or beneficially applied, shall not be considered as being the property right in itself, but such right shall become" (and this is important) "the complement of, or one of the appurtenances of, the land or other thing to which, through necessity, said water is being applied; and the right to continue the use of any such water shall never be denied or prevented from any cause than the failure on the part of the user thereof to pay the ordinary charges or assessments which may be made to cover the expenses for delivery of such water."

Under these guaranties, the farmers of Idaho have felt very secure. But now we have a bill introduced in the Senate, S. 1333, which asks the people of Idaho to relinquish all the privileges guaranteed them by their State. We feel that persons advocating the passage of such a bill are endeavoring to give away something which does not legally belong to them. We Idahoans are jealous of our State's natural resources.

We are unable to understand why the Congressmen and Senators of other States have permitted themselves to become parties to a socialistic conspiracy to deprive Idaho of its constitutional right to supervise the distribution of its water which is our most valuable natural resource. I wonder what these same men and their constituents at home would say, and what their reaction would be, were our Members of Congress and Senators drawn into an unholy alliance to deprive their States of their right to administer and control their most valuable natural resource?

Let me draw your attention to my personal reasons for opposing any bill of the nature of the one we are considering today.

Countless columns in the Congressional Record and other publications have been used to amplify the so-called virtues of a Federal Hells Canyon Dam. One of the much publicized issues is the flood-control feature. To my knowledge these assertions are woefully overdone and highly misleading. As an example, during the 1948 flood the highest maximum discharge of Snake River at Oxbow, which is the last gaging station above the presently proposed Federal

Hells Canyon Dam site, was 55,100 second-feet. Now compare these figures of the very same time with those of the Salmon River at Whitebird which maximum discharge was 103,000 second-feet; and the maximum discharge of the Clearwater River at Spalding for the same period was 177,00 second-feet. On which river, then, is the flood-control needed? You be the judges.

If Federal funds are available for flood-control purposes, it is logical that these funds should be invested on the rivers where floodwaters originate.

So I ask you, Is it water for the generating of power that these people are asking? Is it flood control these people are wishing to provide? Or is it power over the control of water. To my way of thinking, the latter with its many ramifications is their objective. To substantiate my questioning of their seeming sincerity in this matter, may I quote from the late Dr. Carl D. Thompson, who for many years prior to his death was employed by the Bonneville Power Administration. He made this statement.

"The movement for public superpower becomes the most vital phase of the public-ownership movement. The control of electric power * * * will obviously carry with it the control of the industries of the Nation, the control of transportation, of mining, and of agriculture * * * It will also dominate and determine very largely the domestic life of the people * * * Electric power is the key to the coming civilization. The struggle therefore, to secure the public ownership and control of this great strategic resource * * * may yet become the supreme issue * * * of America."

Another fallacy of the bill is the claim that absolutely protects upstream water rights. This is only sop for the gullible, for if it is enacted with its flood control and navigation provisions, the Federal Government under the decisions of the United States Supreme Court will have paramont right and an entirely new set of codes would have to be established as our State courts would have no jurisdiction whatsoever over our water rights. In other words, we shall have given to the Federal Government right to all the waters of the Snake River drainage area. The thousands upon thousands of dollars which have been spent for the clarification of these State rights would have gone down the river with our water.

We are fearful that during the lean years of natural moisture, when our reservoirs do not fill, and when big industry has been developed on the lower regions of the river, that political pressure could be applied, and that some Federal official would say: "Open the gates to the reservoirs, as we are desperately in need of water for power."

Under these conditions it is logical to believe that the Federal Government, with from one-half to $1 billion invested in a gigantic power dam would be more likely to protect its huge development of subsidized industries than the water rights of the citizens of the upper regions of Snake River, inasmuch as our voting numbers are numerically small in comparison with the thickly populated States of Washington and Oregon.

Fortunately we have been forewarned, through the attitude of the individuals sponsoring this hearing, of the bitter dose they intend to administer to us outside our own territory. We are, if the facts are to be considered, the grassroots of Snake River.

We had hoped that the will of the people of the Snake River Valley as expressed at the last general election in Idaho would be respected. In that valley each candidate for office who supported the Hells Canyon Dam philosophy was overwhelmingly defeated. Such does not seem to be the case.

We are told by the proponents of the Federal Hells Canyon Dam that it is needed "for a greater America." But is it not true that the welfare of agriculture is the backbone of the State of Idaho and the Nation?

I can think of many ways of developing electric power other than by the use of water. But there is only one way of producing fat lambs and steers, or growing sugar beets, potatoes, and grain. To produce these essential food products, equally necessary for making a greater America, we must have water and land. Hydroelectric power is a poor substitute for bread and butter.

Gentlemen, Idahoans are proud of the present form of their State government, as you are equally proud of your individual States. Why should we be asked to lose our sovereignty? Why should we submit to Federal dictatorship?

Someone has said, "Freemen and freewomen and free enterprise are the fundamental factors in world progress."

Gentlemen, I thank you for the consideration you have given me.

STATEMENT OF RALPH J. COMSTOCK, OF POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Being located in southeastern Idaho, engaged in a business largely dependent for its successful operation on agriculture and the industrial development of this area, I wish to file my protest to the bills now before Congress for the authorization of the construction by the Federal Government of a high dam in the Hells Canyon area of the Snake River for the following reasons:

Every irrigation district and organization in the Snake River Valley has opposed this proposition for the reason that such a project under the jurisdiction and control of the Federal Government places in jeopardy the water rights upon which agriculture in the Snake River Valley is dependent.

Being a firm believer in private enterprise, I cannot justify the construction of a purely power project by the Federal Government with taxpayers' money when private enterprise stands ready, willing, and able to do the construction at less than half the capital investment, which will result in lower rates and a substantial tax income to the Government instead of a tax burden to the Government.

The electric power shortage in the Northwest United States is well known and immediate development of power resources is necessary if power is to be available for industrial expansion and development. Exhaustive hearings that have been held on the Hells Canyon proposition are unanimous that power to be produced by private enterprise can be made available not only at less cost, but at a time several years earlier than it could be made available from a Federal Government project.

The possibility of a high dam at Hells Canyon to be financed and constructed by the Federal Government has twice been considered by the National Congress and approval refused.

As a result of exhaustive hearings before the Federal Power Commission, a decision should be forthcoming at an early date from that body, either granting or refusing a license to private enterprise for the development of the Hells Canyon stretch of the Snake River. Since the Federal Power Commission is the body authorized by Congress to study such problems and determine the best public interest, I would urge that no action be taken in this matter until the report of the Federal Power Commission has been made available.

Copies of the above statement are being mailed to Congressman Hamer Budge, United States Senators Henry Dworshak and Herman Welker.

OPENING STATEMENT

My name is Fred M. Cooper. I live at Grace, Idaho, where I operate a farm and engage in livestock raising. I have resided in southeastern Idaho as a farmer for 41 years. I am the State senator from Caribou County, and am a member of the Bear River Compact Commission.

I appear here as president of the Idaho State Reclamation Association, which was organized in 1937 and has an active membership of more than 200 local irrigation districts and canal companies which altogether operate the irrigation works on approximately 2 million acres of irrigated land in Idaho. For years the association has been the spokesman for irrigators of the great Snake River Basin of southern Idaho. A further description of the association is to be found in my prepared statement.

This hearing purportedly has been called to get a grassroots expression from the people regarding S. 1333 and the companion measures introduced in the 84th Congress to authorize Federal construction of the Hells Canyon project.

I, for one, was greatly dismayed and alarmed to find the original schedule of the hearings omitted any consideration of the people most directly affected, namely, the farmers and irrigators of southern Idaho. As a last-minute concession, this 3-hour hearing was permitted, of which only 90 minutes are allowed for all of the organizations and individuals who oppose this measure. In contrast, 2½ days are allowed to downstream areas where the people are not directly affected as are the irrigators of southern Idaho. Even here at Boise the great majority of Idaho irrigators are bypassed. The distance from Boise to the heart of the Snake River's great irrigated empire is as far as from Washington, D. C. to New York, and hundreds of Idaho irrigators are unable to drop their work and travel the distance.

Two things are increasingly plain: (1) the Federal Hells Canyon Dam is a political dam and (2) its promoters are concerned very little about the Idaho irrigators, present and future, who will have to supply the water.

Even during these days of courtship by the proponents to gain support for the project by means of solemn assurances that irrigation water rights under State law will be forever protected, the emphasis is placed on what people as far away as Portland think rather than on what Idaho irrigators think. Under these circumstances, just how much consideration would be given to Idaho water rights once the project were constructed and placed in operation? I think the answer is, Not very much.

This same question goes to the heart of the position taken by the Idaho State Reclamation Association. Time and time again by resolution the association has stated its unalterable opposition to the Federal project at Hells Canyon. In most cases the votes have been unanimous. To my knowledge there is not a single irrigation district or canal company in Idaho that has ever gone on record in favor of a Federal Hells Canyon Dam. The granges and farm bureau groups in the affected area have taken firm stands against it in overwhelming numbers.

Gentlemen, if you are seeking grassroots opinion from the people most directly involved, there is no question but that Idaho irrigators are violently opposed to the Federal Hells Canyon Dam.

It is not a reclamation dam. Not a single acre of land would be irrigated from its reservoir. It is a power dam pure and simple, and therein lies its potential threat to irrigation in Idaho. The Federal Government has paramount rights to the use of our waters, and those rights are superior to State law. All the Federal Government needs is a vehicle for the exercise of those paramount rights.

We have drifted a long way toward Federal domination and control of our water resources. Every step taken toward that end brings us nearer the day when the so-called paramount rights can be exercised. If the proponents of Hells Canyon can sell Congress this bill of goods, it's a short step to subordinating Idaho water rights to a Federal power bureaucracy more responsive to downstream power consumers than to upstream irrigators.

The Idaho State Reclamation Association over the years has consistently opposed creation of a Columbia Valley Authority. We oppose the Federal Hells Canyon Dam for the same reasons. It would be an effective entering wedge for Authority domination and control of our water.

STATEMENT BY FRED M. COOPER, GRACE, IDAHO, PRESIDENT OF THE IDAHO STATE RECLAMATION ASSOCIATION, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

My name is Fred M. Cooper, and I am a farmer and livestock grower. I am the State senator representing Caribou County, chairman of the irrigation and water resources committee of the Idaho Senate, and member of the Bear River Compact Commission.

I am making this statement as president of the Idaho State Reclamation Association and on behalf of that association's officers and members.

The Idaho State Reclamation Association was organized in 1937 and has an active membership of more than 200 local irrigation districts and canal companies which altogether operate the irrigation works on approximately 2 million acres of irrigated land in Idaho, which is more than 90 percent of the total. For years the association has been the spokesman for irrigators of the great Snake River Basin of southern Idaho.

The Idaho State Reclamation Association is a truly grassroots organization of farmers and irrigators. The association selects its officers in annual meetings, and all officers are men directly connected with irrigation, either as individual farmers or as officers of irrigation districts and canal companies. The board of directors of the association is representative of the different geographic sections of the State's irrigated acreage. The association is financed by irrigation districts and canal companies on a pro rata acreage basis, and by business firms whose livelihood is related to agriculture and whose contributions are solicited by the association. Voting power in the association is limited to bona fide representatives of irrigated land.

Officers of the Idaho State Reclamation Association testified at length before the House Subcommittee on Irrigation and Reclamation at Washington, D. C.,

in 1952 in opposition to H. R. 5743, which was similar in its essentials to the measure now under consideration (S. 1333). At the conclusion of the 1952 hearing, the subcommittee voted unanimously, in a bipartisan action, to table H. R. 5743 indefinitely.

Since the time of the 1952 hearing members of the Idaho State Reclamation Association have held three annual meetings, and on each occasion have adopted strong resolutions opposing the proposed Federal project at Hells Canyon. The gist of those resolutions is that each legislative measure to authorize the Hells Canyon project is a "public power bill, and not a reclamation measure; that they would endanger existing and future water rights in Idaho and would lead to Federal instead of State control of the waters of Snake River and its tributaries."

These expressions of grassroots opinion from the people most directly affected, and most seriously affected, have been unanimous in most instances. To my knowledge, there is not a single irrigation district or canal company in Idaho that has ever gone on record in favor of a Federal Hells Canyon Dam. There is not a major statewide farm organization in favor of it. The granges and farm bureau groups in the affected area have taken firm stands against it in overwhelming numbers. Only last month the water users of district 36, which comprises some 1,250,000 acres of irrigated land in the Snake River Basin, in annual meeting at Idaho Falls, reiterated their opposition in no uncertain terms.

Gentlemen, I submit this question: If the subcommittee is sincerely desirous of seeking grassroots opinion from citizens most directly affected by the Hells Canyon proposal, and is equally desirous of heeding that grassroots opinion, how can you fail to discard Senate bill 1333 and all similar measures?

The fact that this issue recurs in the Congress with monotonous regularity at the insistence of downstream politicians and Federal-power-or-nothing fanatics is devastating evidence confirming the fears of Idaho water users. If the Federal dam at Hells Canyon can be sold to Congress, it's a short step to the subordination of Idaho water rights to a Federal power bureaucracy more responsive to downstream-power consumers than to upstream irrigators.

It is fascinating to contemplate the fact that most of the tub thumpers for the Federal Hells Canyon Dam are the same people who have espoused with equal vigor the creation of a Columbia Valley Authority, an idea presently laid on the shelf for future reference merely because citizens of the Pacific Northwest have rejected it. The Idaho State Reclamation Association over the years has consistently opposed creation of a CVA. We oppose the Federal Hells Canyon Dam for the same reasons. It would be an effective entering wedge for authoritarian domination and control of our water.

We are not impressed by frantic efforts of Hells Canyon proponents both in and out of Congress to reassure irrigators that irrigation water rights secured under State law would be protected under S. 1333 and other similar bills. There is no question but that the Federal Government now holds, under the Constitution, a paramount right to all of the waters of the Snake River and its tributaries. The present Congress, we believe, would refuse to exercise those paramount rights. Subsequent Congresses might readily do so.

The best practical protection to water rights now is the absence of a means, which the Federal Hells Canyon Dam would afford, of exercising acknowledged paramount rights of the Federal Government. Bear in mind that Idaho irrigators, present and future, must supply the water to make the Hells Canyon power generators operate and to fill and refill the reservoir. Competent engineers have testified under oath that in future years of short water supply, and when maximum development of upstream irrigation has been achieved, there is not enough water in Snake River to do both jobs. At that time the inevitable conflict of interest arises between irrigation and downstream power.

Every indication to date leads to the inescapable conclusion that those who advocate the Federal project would give scant consideration to irrigation if they were then in positions of authority. The scheme of the proponents and their glib assurances of water-right protection are not compatible ideas.

Idaho irrigators are accustomed to watermasters of their own choosing. They are not prepared to accept a political watermaster with divided loyalty, however benevolent such watermaster may appear at any particular time.

To irrigators, many of the plans for so-called comprehensive basin development seem to presume a "master control" in the hands of politicians far removed from the grassroots. They see the Bureau of Reclamation getting away from its original purpose, that of irrigating land, and placing most of its emphasis upon the generation of hydroelectric power. The Hells Canyon Dam is not a reclamation dam. Not a single acre of land would be irrigated from its reservoir.

It is a power dam, pure and simple, and therein lies its potential threat to irrigation in Idaho.

The Idaho State Reclamation Association is wholly in favor of progress and development. We simply do not wish to get away from the principles under which irrigation and reclamation have grown to provide a thriving agricultural economy in our State.

Because S. 1333 is, in our opinion, a departure from those principles; because the building of a gigantic Hells Canyon Dam would place in the hands of the Federal Government an instrumentality which might subsequently be used to adversely affect the irrigation waters which are the lifeblood of our State, we oppose this bill, S. 1333, and all similar legislative measures.

Let nonfarm pressure groups concern themselves with matters directly affecting their welfare. Let downstream promoters of political dams stay within their own boundaries. Let planners, authority-seekers and would-be watermasters find a more fertile field.

This is Idaho's water—let it alone!

STATEMENT OF GEORGE CORDES, BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am George Cordes, Boise, Idaho.

I am here today to make it known that I am personally opposed to the Government construction of a high dam at Hells Canyon. In my opinion, this dam would not be beneficial to the people of southern Idaho or of the State of Idaho.

I am also of the opinion that it is much better to let private enterprise do the construction work when they are willing to do it. The utility of this area is ready to do exactly that. I have always believed that private enterprise should be allowed to do any and all development they possibly can.

I believe also that everything should be done back in Washington to allow the Federal Power Commission to render their verdict on the Idaho Power Co.'s application to build dams in the Hells Canyon stretch of the river unhampered by politics. When the development is done in an economical manner, should the Federal Power Commission issue this statement, I believe it should be final and that each party should abide by it rather than carrying this case further.

If private enterprise is delayed, there may come a time when the economy of Idaho would be affected. I feel that this development should be done by private enterprise.

STATEMENT OF NEIL H. CARLTON, OF BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

We are in favor of the Idaho power proposal for development of the Snake River. We would very much like to see prompt action taken to get this matter settled once and for all.

STATEMENT OF WILLIAM R. CUNNINGHAM, PRESIDENT, ST. ANTHONY CHAMBER OF COMMERCE, ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, APRIL 4, 1955

The board of directors of the St. Anthony, Idaho, Chamber of Commerce have carefully considered the proposed construction of the high dam on Snake River at Hells Canyon by the Federal Government. We oppose the construction of such a project and urge that you do all in your power to prevent its authorization by the United States Congress.

As we analyze the project, it can be of no possible future advantage to the upper Snake River Valley and we foresee a direct conflict with future development of the resources of all the Snake River area above Hells Canyon. Future development of the upper reaches for irrigation and other purposes would be jeopardized by its very presence and demand for water to make its generators run, regardless of any phrases in the legislation to the contrary.

Development of our water resources can best serve Idaho and the Nation if it starts at the headwaters and progresses downstream. Multiple-purpose

projects here on the headwaters can provide for repeated and beneficial use of our water. The proposed Hells Canyon development would stalemate many important and desirable projects whose returns to the economy of this State and the Nation will aggregate much more than the high dam.

We certainly appreciate this opportunity to express our views on the proposed legislation.

STATEMENT OF CHARLES M. CHASE, NAMPA, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Having observed the Hells Canyon and power hearing movement, and studied the question in a clear, fair, and unbiased view, I am opposed to the Hells Canyon construction in many ways, but mainly because of agriculture. Boise Valley is making great strides, likewise the Snake River area. I feel the above movement would jeopardize this to the *n*th degree.

STATEMENT OF MOWBRAY DAVIDSON, PRESIDENT, PEASLEY TRANSFER & STORAGE CO., BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 5, 1955

My name is Mowbray Davidson and I have been a resident of Ada County, Boise, Idaho, since 1912. I vote in precinct 18 and am a taxpayer in this State and county.

I understand that it is my privilege to have a statement read at the hearing April 4 on the Hells Canyon Dam issue. If this is the case, I would like to go on record as opposing the Federal high dam at Hells Canyon in favor of the three low-head dams to be constructed by the Idaho Power Co. I am in favor of private enterprise over tax-exempt Federal projects, whenever private enterprise is willing and able to perform the necessary construction.

As a citizen of Idaho, I consider it my privilege to express my views in this matter and, as stated above, I am against construction of the high dam at Hells Canyon by the Federal Government.

STATEMENT OF GEORGE B. DAVIS, MERIDIAN, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am strongly opposed to the Government's proposal of Hells Canyon Dam. I do not believe in Government competing with private enterprise. I know of no single instance where the Government has been either as efficient or economical as has private enterprise. The Idaho Power Co. has done a magnificent job in furnishing power and service to the people of Idaho. I have every confidence that they will continue to meet the growing needs as efficiently and reasonably as they have in the past.

We do not want any more Government control. Private enterprise has made our Nation what it is today. Let's try to keep it as democratic as possible.

STATEMENT OF HOMER S. DEAL, BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am a native of the State of Idaho, citizen and taxpayer of this State residing for the past 20 years in Boise, Idaho.

During the past 30 years my work has been closely connected with that of agriculture and dealing with farm people. We have had the opportunity to study and know intimately the progress of irrigation in the State of Idaho and the power development relating to agriculture during the past 25 years. In both instances we have been users of water and power.

We are greatly alarmed over the present conflict between the Federal Government and their attitude on great power projects to the extent of curtailing irrigation. We are personally aware of the conflict existing today between the

Federal Government's proposed power project and that of irrigation. We know that the lifeblood of our area deals with irrigation and we vigorously protest any usurping of these rights by the Federal Power Commission or any formation of such authority as the Columbia River Valley to do this thing.

Irrigation and power have gone hand in hand and the great growth of our area today with the new type of irrigation is dependent on 2 things, water and power; therefore, we oppose any curtailment of the growth of these 2 vital commodities.

Further, we oppose the spending of taxpayers' dollars and assessing additional burden to our property for construction or building of any project that can be done through private enterprise. The proposal for Federal intervention where private industry is capable of handling the needs of a great area seems to be positively unwarranted. Our present power facilities in the area have been adequate and have met the needs of a great growing area and with proper approval will continue to do a necessary and valuable job without burden to taxpayers and with due consideration to the necessary curtailment of the free flow of the lifegiving waters to the lands of our great State of Idaho.

STATEMENT OF DON DICKERSON, WEISER, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Between June 1927, and October 1954 I have viewed and studied the canyon of Snake River, known as Hells Canyon, at least 200 times or more, and from my observations I am opposed to the construction of a high masonry-type dam in that canyon for the following reasons:

1. That future reclamation needs of the Snake River Basin in southern Idaho will cause a very large depletion of the flow of the Snake River. In fact, we are about the halfway point of reclamation development. For example, there are 11 unconstructed reclamation projects on the Weiser River.

2. A 712-foot masonry dam at Hells Canyon will constitute a major safety hazard for the entire river basin. In the first place this canyon is a fault or crack in the earth which drained a large lake which originally covered much of southern Idaho. Just suppose one side or the other of this fault were to settle, say 6 inches.

And further suppose some large nation not now very cooperative or friendly toward us, should decide to attack us, what better place could they place one single bomb or torpedo to cripple, in fact tie up and immobilize the entire Northwest, than to blow this huge dam and release this terrific volume of water down the Snake River? Visualize the destruction this would cause if you can. Army engineers estimated this would flood Portland, Oreg., to the fourth floors of downtown business houses. Visualize the destruction of highways, railways, powerlines, towns, homes, human life, and the other downstream dams.

Frankly, gentlemen, I would want no part in the construction of a Trojan horse of this magnitude.

STATEMENT OF D. M. DICKOVER, OF BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I have been long a voter and taxpayer in the State of Idaho. I am employed by the Boise Payette Lumber Co. as chief of home planning service.

I wish to voice my opposition to the Federal Government building a high dam at Hells Canyon with taxpayers' money. I have always been and will continue to be a booster of private enterprise in the development of the natural resources of this the United States.

STATEMENT OF DAVE BIVENS, FARMER AND STOCKMAN, PAYETTE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am Dave Bivens, a farmer and stockman living 4 miles south of Payette, Idaho. I object to any proposal to use tax money to build a power project in Hells Canyon or any other place when the job can be done equally well or better by taxpaying private enterprise.

We all know what a staggering taxload we carry, in direct taxes alone. It is estimated that all taxes combined, hidden and direct, take about a third of one's income. Taxes boost the cost of the equipment that a farmer must buy, thus making it more difficult for him to operate profitably. In my opinion, the tremendous money requirements of Federal Government are a most serious threat to our economic welfare, and even to our very freedom.

I believe the expansion of Government into business, the increasing of indebtedness, the increasing of taxes must stop. American Government was never intended to go into the power business or any other kind of business. Imagine a Government-operated farm enjoying tax exemption and other privileges and operating in competition with privately owned farms. The land is just as much a natural resource as the water.

Idaho Power Co. proposes to build three large hydroelectric projects in Hells Canyon. Federal Power Commission staff and other engineers have testified that the company's plans are sound and assure full and comprehensive development. When these are in operation they will pay about $10 million a year in taxes. We need the power, and we obviously need the tax money to help meet commitments of Government.

We are tired of the delays, the political controversy. We want action. We want a Federal Power Commission decision. After all, the Federal Power Commission was established by Congress to pass on such matters. We await that decision so we can proceed with our development. Less interference by Federal power fanatics in neighboring States would be appreciated.

STATEMENT OF DALE A. DOBBIN, DOBBIN IMPLEMENT CO., MARSING, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I do not favor legislation enacting the high dam at Hells Canyon until the Federal Power Commission has rendered their decision on the Idaho Power Co. application for the three low-head dams. Such decision to be decided on by facts which the Federal Power Commission now have.

STATEMENT OF DAVID M. DOUGLAS, CALDWELL ELECTRIC CO., OF CALDWELL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I have been in the electrical contracting business for many years. I feel the Idaho Power Co. is serving this area in an excellent manner. I feel they would be far better qualified to develop Hells Canyon than by legislation based on political ideology.

Also, that the Federal Power Commission is the authorized agency for ruling on applications for hydroelectric developments and should be afforded an opportunity to render a decision on the Idaho Power Co.'s application to develop the Hells Canyon area.

STATEMENT OF W. S. DRAKE, PRESIDENT, DRAKE PLUMBING CO., BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

In regard to Senate investigation on Hells Canyon Dam controversy, I would like to make my opinion clear on this point. Having been in business in Idaho for the last 35 years, am slightly partial to Idaho natural resources and properties. I would not like to see the Government improve Idaho resources for the benefit of Oregon and Washington.

I do not believe that the Government should develop that which belongs to us for their own, or others' benefit.

STATEMENT OF C. B. DREW, WILDER, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I wish to be placed on record as being unalterably opposed to the high Federal dam at Hells Canyon for the following reasons:

(1) I do not wish to become party to a grandiose scheme conceived and promoted by what I feel is a group of socialistic schemers.

(2) Government must and shall remain out of the realm of private enterprise.

(3) I am a farmer of many years although still a young man and romantic enough to say "I love my water right" and I'm not going to give it up without a battle.

You may use this in any manner that you see fit to contribute to the defeat of the Federal dam.

STATEMENT OF RAY DUNCAN, OF ONTARIO, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

In regard to the Hells Canyon controversy, its supporters contend for one thing, that it is essential as a flood-control measure. This is absurd since most of the upper Snake River tributary floodwaters are being stored at the present time for irrigation purposes and there is still more of that kind of development planned, so the filling of the Hells Canyon Dam is problematical.

Development of power by private companies can furnish power in 2 or 3 years, while the Hells Canyon Dam will not give any power in less than 10 years. Then, too, the private utility development would all be taken care of by private capital and in turn, the private company would pay taxes instead of having the taxpayers build and support them, as would be the case if the Federal Government builds Hells Canyon.

As to the amount of power that would be developed by either party, there would be very little difference.

The majority of the people in Oregon are decidedly against the Hells Canyon project which was clearly shown in the campaign of Al Ullman against Sam Coon. Ullman was defeated by a very substantial majority as was Earl Newbry for Governor, the Republican primary, as was Joe Carson the Democratic nominee for Governor. Each of these were using the Hells Canyon as a vote-getting issue.

PUD elections have failed here several times. The main part of the people in this State who favor Hells Canyon are the ones who are extreme liberalists. To me, this isn't an issue that takes the country's economy into consideration, but just one more step toward a complete monopoly of all Northwest power, whereas if this development were made by private utilities, they would be under strict regulation by existing Government and State agencies.

Why can't we keep our country the way we now know it so our kids and their kids may know the job of living where they please, doing what they want to do, and worshiping God as they see fit. In other words, let's let our Federal Power Commission decide the issue on the evidence already in their hands, and then, let us abide by their decision.

STATEMENT OF THE EMMETT IRRIGATION DISTRICT, OF EMMETT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

The Emmett Irrigation District is opposed to the Federal Government building a high dam at Hells Canyon on the Snake River. It is the feeling of this board that private enterprise should be permitted to build the dam providing they are ready, willing, and able to build such a dam or suitable low-head dams on the same river.

It is the feeling of this board that the proposed Federal high-dam construction would eventually jeopardize the upstream uses of water on the Snake and its tributaries, both for reclamation and irrigation purposes. It is felt that in the event a high Federal dam was built on the Snake and there was insufficient downstream flow for its operation, Congress could in the exercise of its constitutional powers, require release of waters from above the dam and thus curtail beneficial use for irrigation and reclamation. Any proposed protection of State water rights in the Hells Canyon bill would not be absolute and cannot be absolute, because of the constitutional powers of Congress that are involved. It would take a United States constitutional amendment to divest Congress of its power and to vest complete control of water resources of navigable rivers as the Snake River, in the State of Idaho. Any claim of State ownership of water must be reconciled with the Federal constitutional powers, the latter being supreme in case of conflict.

We also feel that there should be no diversion of the Payette River or its tributaries to the Boise River, which might be detrimental to the beneficial water users in the Payette Valley. The Payette River is not an adjudicated river and there could be serious, complicated, and expensive litigation over water rights in and along the Payette Valley should the Payette River or its tributaries be diverted elsewhere. There are thousands of acres of land in and near the Payette Basin that could be irrigated and developed in the future with a relatively small amount of cost to the taxpayers as compared to the development of the Mountain Home division, through diversion of Payette River waters.

It is the feeling of this board that a survey should be made by the Federal Government, of lands in and along the Payette Valley to determine the actual number of acres of land available for irrigation. Unofficial investigations have indicated the land to be fertile and productive.

EARL WILFONG,
President of the Emmett Irrigation Board.

RESOLUTION OF THE KIWANIS CLUB OF EMMETT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Whereas there have been introduced in the Congress of the United States certain bills to authorize the construction, operation, and maintenance of a single high dam at the Hells Canyon site on the Snake River between Idaho and Oregon; and

Whereas the legal staff of the Federal Power Commission has favored the construction of three dams as planned by private enterprise and the Department of the Interior has agreed to the findings of the Federal Power Commission; and

Whereas private enterprise has demonstrated its desire, its willingness, and its ability to construct these dams and to develop this same natural resource with approximately the same results; and

Whereas construction by private enterprise would be completed with private capital at an estimated reduction in cost of $296 million; and

Whereas those certain bills have, in order to make them more attractive, incorporated provisions for construction of facilities at Scriver Creek on the Payette River, which are in no way a part of the Hells Canyon development; and

Whereas the protection of present and future water rights along the Snake River and its tributaries is imperative to the welfare of the people of Idaho: Now, therefore, be it

Resolved, That the Kiwanis Club of Emmett, Idaho, strongly opposes the construction of a high dam at Hells Canyon by the Federal Government and strongly opposes the attempt to tie in development of the Scriver Creek facilities with the Hells Canyon construction and that this resolution shall be presented to the Subcommittee on Irrigation and Reclamation at the hearing in Boise, Idaho, on April 4, 1955, as evidence of the beliefs of this organization; be it further

Resolved, That copies of this resolution shall be forwarded to each member of the Idaho congressional delegation with the request that they lend their assistance accordingly.

LEWIS GORRONO, *President.*

STATEMENT OF W. W. EVANS, PRESIDENT, FIRST NATIONAL BANK OF HALFWAY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, IDAHO, APRIL 4, 1955

We look upon these present hearings in connection with the Hells Canyon controversy as a smokescreen to confuse the issue. This controversy is given credit for the political upset here in Oregon last November, as though this vote was a mandate of the people for the construction of the Federal high dam, when in reality the politicians most involved know better.

According to the engineers' findings, the secries of 3 low dams proposed by the Idaho Power Co. can be constructed for approximately one-third of the cost of the Federal high dam and will produce to within approximately 15,000 kilowatts of the high dam's potential. The glamour of the high dam is not worth this difference to the taxpayers who have to carry the burden, and if there ever was a time when Uncle Sam should curtail expenses it is now.

The recreational advantages of the Federal high dam will not be increased or diminished by the series of low-head dams, and there are no irrigational possibilities in either project. All of this talk about transportation is rubbish to those of us who live nearby and know the facts as they are.

We were clerk of our local high school whose district comprising the territory served by the First National Bank of Halfway, and including the Ox Bow section of the Snake River, and we remember the upset to the school budget when the Union Pacific Railway abandoned the track from Robinette to Homestead. Undoubtedly the construction of the Ox Bow powerplant in this district will shift the tax burden to other shoulders, which relief our farmers sorely need.

We have watched the Idaho Power Co. in operation for 30 years as an officer of the First National Bank of Halfway. We know many of their officers and employees personally, and we have yet to hear of any act unworthy of the complete confidence of any honest upright citizen in the territory they serve. We have long since concluded that in their hands is a good safe place to confide our natural resources.

Why not junk all of this prejudice and political chicanery and go ahead with FPC decision on the merits of the yearlong hearing? Undoubtedly the records of this hearing unfold a clear picture of the findings of those competent to judge the merits of both propositions.

STATEMENT OF JOHN BATY, MASTER, FAIRVIEW GRANGE, BUHL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am a farmer at Buhl, Idaho. I have a farm of 120 acres which I have paid for by 20 years of hard work. This farm is my means of making a living, supporting my wife and children, and which I hope will secure their future. But this security depends on the water right which I possess of the Snake River. Anything that can ever harm that right is a threat to my future and that of my children. I do not want a Federal-controlled high dam at Hells Canyon, which is controlled by a group of men in Washington, D. C.

I pay taxes on my land to support my Government and my schools. I do not want to have these taxes used to build a dam to generate cheap power for industry when a private taxpaying company could do the job. Our country is now in debt too deep. We need private taxpaying companies, not tax-spending, Government-controlled dams. I think industry should pay for electricity from taxpaying companies the same as I do.

My farm was at one time just a part of the natural resources of our country. I developed it and now help to support the country of which it is a part. Let private industry develop our rivers and, in turn, through taxes, help support this country of ours.

Dams built with taxayers' dollars and supported with taxpayers' dollars are only drones. Let private industry build them and they will be workers. Our country has become great through private enterprise. Let us keep it that way. Let us have a Government to govern, not to compete unfairly with ourselves.

67129—56——29

STATEMENT OF HENRY H. FALKNER, BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am Henry H. Falkner and reside at 2804 Teton, Boise, Idaho.

I am a substantial taxpayer, head of a family of 6, and have lived in Idaho 6 years. I am manager of the Westinghouse Electric Supply Co., a wholesale electrical distributor, in Boise, Idaho.

I am opposed to the Federal Government's construction of a high dam in Hells Canyon. I am firmly convinced that with private enterprise desirous of using private capital to construct three low-head dams in the reaches of Hells Canyon they should be authorized to do so.

For the United States Government to be in competition with private enterprise represents, in my opinion, a threat to our freedom and the free-enterprise system that built America into the strongest Nation economically and financially in the world.

The foregoing statement is my personal viewpoint on the subject and does not necessarily represent that of my company.

STATEMENT OF C. ED FLANDRO, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am a small-business man.

I pay a lot of taxes and can't stand any more.

I have no political ax to grind with any political party.

I don't need water for irrigation, but I don't like continued encroachment of Government into financially able and capable private enterprise.

I do think the FPC has all the facts and is the most capable of any group to render a decision on the Hells Canyon matter.

I do think that this issue, like so many, has become a political football to the detriment of the people.

I also think, along with thousands, that a few "headline hunters" in our Government can and are doing untold damage to a highly successful proven economic system by constantly attempting to stifle free enterprise in America, its last stronghold in a troubled world.

May God grant us the ability to save a little of what is left for posterity.

STATEMENT OF HENRY H. FLETCHER, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

The controversy over whether a public-owned high dam or three privately owned low-head dams should be built in the Hells Canyon area has been raging far too long.

Surely, after the extensive hearings which have been held, sufficient evidence is on the record from which the Federal Power Commission can make a proper decision. Further hearings on this subject should be avoided.

As a taxpaying citizen of Idaho, I personally believe—

1. Maximum use should be made of Idaho's available water resources.
2. Such use should give primary protection to Idaho's irrigated lands.
3. Power generated from Idaho waters should first be made available to Idaho people and industry for maximum State development.
4. Development of power should be accomplished by private capital wherever possible, and by Government only when necessary projects cannot be financed by private capital.

An early decision on the part of the Federal Power Commission is possible if the public power advocates will not cloud the issue with demands for further evidence to be submitted. Such an early decision, if it favors development of waterpower with private capital, will assure an early start and completion of the low-head dams proposed by Idaho Power Co.

If the decision favors public-owned dams and powerplants, it will take years to develop waterpower so that it may benefit the people of this general area. Public power will cause the taxpayers of the country an additional tax burden and even with this help from the taxpayers' pockets, I cannot be convinced that

the power sold to the public will be less costly than privae power. By comparison, Idaho Power will pay millions in taxes every year which the State of Idaho and the Federal Government will be deprived of under public ownership.

Public power is one more step in a socialistic system and diametrically opposed to basic business principles in America. Private power is in line with America's free enterprise system. Let's keep our system sound.

May I urge that everything possible be done to expedite a right decision for development of Idaho's water resources for the benefit of Idaho first.

STATEMENT OF PHILIP FORD, WEISER, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am opposed to the construction of the Hells Canyon Dam by the Federal Government for the following reasons:

1. Idaho's future water needs will be impaired if 3,800,000 acre-feet of water are required for reservoir storage.

2. The tremendous difference in cost between the high dam and the three low dams does not justify the relatively small difference in power volume to be generated.

3. I believe that in all cases where private enterprise is able and willing to invest the capital necessary for the development of our natural resources that this should be its right and duty to do so without Government competition or restriction, beyond the Federal laws of regulation and control.

4. The tax revenue derived from successful private ownership and operation far surpasses any other means of promoting the general welfare.

STATEMENT OF FREMONT-MADISON IRRIGATION DISTRICT, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am chairman of the Fremont-Madison Irrigation District, which comprises practically all of the land in Fremont County, Madison County, and Teton County. These counties are at the source of the Snake River. We have been working for years for additional water supplies and have built our own reservoir, the Island Park Reservoir, with the aid of the Government. We are paying back to the Government every dollar which they have expended. This venture has been put on a business basis.

We have studied this Hells Canyon problem and the water problems of the Snake River for years. The Fremont-Madison Irrigation District is unalterably opposed to the Government's high Hells Canyon Dam. We are served by the Utah Power & Light Co. and we feel that our water rights should be protected.

We recently had a hearing at Idaho Falls with the Army engineers. We think that your committee should get the report of these agencies who have made a complete study of the water resources before any Government dam is built at Hells Canyon. We are for private enterprise, the American incentive system that has made this country what it is. Even though some companies appear to have a monopoly, they are regulated by agencies even as to the prices charged. We feel that we would be better served, if there is any surplus water, to have the surplus handled by private enterprise instead of public power.

J. C. SIDDOWAY, *Chairman.*

STATEMENT OF W. M. FROME, REPRESENTATIVE FROM FREMONT COUNTY, IDAHO, HOUSE OF REPRESENTATIVES, ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, BOISE, IDAHO, APRIL 4, 1955

We, the people of Fremont County, are very much and rightly so concerned about our water rights if the proposed Hells Canyon Dam is constructed.

We are very much opposed to the construction of this Federal project until the people of Idaho are assured without a question of a doubt that our water rights will be fully protected now and in the future.

STATEMENT OF A. C. GARBER, CALDWELL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I do not have the technical knowledge to make a statement from an engineering standpoint. This information, I believe, has been submitted to the FPC and that body is in a position to judge these facts.

I am opposed to the legislation, which would provide for a Federal dam at the Hells Canyon site, however, because:

1. Private construction would accomplish the purposes for which the high Federal dam is proposed—and has established the fact that they will construct these dams.

2. The applicant has shown financial ability to construct the proposed dams.

3. If private enterprise can, and will, satisfactorily accomplish the purposes of any part of our economic structure, this should not be taken over by our Government, because:

(*a*) It is contrary to the fundamental principles of our economic and political structure.

(*b*) It means the use of Federal funds—tax money—for the construction of this project.

(*c*) It eliminates a large sum of tax money that would be contributed by private enterprise.

(*d*) It eliminates the incentive that results in most efficient operation.

4. I feel that much of the opposition to the Idaho Power Co.'s proposed projects is prompted by political expediency without consideration of the ultimate result to the economic and political welfare of the State of Idaho.

STATEMENT OF D. J. GAVED, ELECTRICAL CONTRACTORS SUPPLY CO., POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am the owner and manager of the Electrical Contractors Supply Co., located at 205 South Third, Pocatello, Idaho. I have served the contractors of this area for the last 5 years, and I can speak with confidence for the contractors and myself that the Idaho Power Co. is a very good firm to work with.

I would like to go on record with the following statements:

1. The Federal Government should not be in the power business in any way or any other business that private enterprise can handle.

2. The Idaho Power Co. should be allowed to construct the three dams as requested in their application to the Federal Power Commission.

3. Congress should table any legislation on Hells Canyon at this time and let the Federal Power Commission make the decision on the basis of testimony and facts presented at the hearings on the Idaho Power Co. application.

STATEMENT OF H. GRANT GARDNER, REPRESENTATIVE FROM PAYETTE COUNTY, FRUITLAND, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I speak for and in behalf of one of the oldest irrigated sections of Idaho and the West, the water users of the lower Payette Valley. Their use started before the turn of the century and when reclamation was in its infancy. I am attempting to represent 50,000 acres of land and 15,000 people located largely within Payette County.

The area was developed by private capital and is served by numerous independent canal companies by water diverted largely from the natural flow of the Payette river.

My personal interest is that of a landowner and operator. I was for many years secretary of one of the irrigation companies and am currently president of a rather loosely drawn organization known as the Payette Valley Water Users Association, which embraces all the Payette watershed, approximately 150,000 acres.

The large majority of the residents of my area have opposed and will continue to oppose any pending Hells Canyon Dam proposals. Their opposition is predicated not on the public versus private power controversy, but on local

irrigation factors, namely, because every Hells Canyon Dam proposal suggests a diversion of water and power revenue to develop the Mountain Home desert.

We admit that we and our forebears have been a trifle negligent and delinquent in not more firmly establishing our cherished rights. We failed in our infancy to recognize the competition that has developed for the use of the waters of the Snake and its tributaries. In our desire to avoid adjudication we have failed to secure, in many instances, proper stipulative decrees. Our case today rests on prior use, continued natural flow of the Payette River and perhaps a liberal reclamation attitude.

We admit we have a surplus of water and we hope that by cooperative effort it can wisely and beneficially be used. But, we assert that the United States Bureau of Reclamation has over the past two decades been evasive, collusive, and to a degree autocratic so far as our interests are concerned.

Some years ago we surrendered a filing on a dam site, at Carbarton on the Payette River, in order to clear the way for erection of the Cascade Dam. At that time a contract was executed, promising us a firm bottom storage right in the Cascade Reservoir. Either inadvertently or conveniently this contract disappeared and to this day we have never been able to arbitrate a new one upon the basis of the old one. They talk only in terms of top storage, and at a greatly increased acre-foot cost.

The Bureau has insisted that no contract for storage or natural flow rights can be negotiated until a comprehensive study of the river has been made. We charge that they have been dilatory.

They, the Bureau, have indicated that our theoretical needs should not exceed 5 acre-feet. We, from a practical viewpoint, insist we need 7 and 8 feet. This is due to our diversification, our small acreages, and the fact that our projects were not engineered and constructed at public expense.

I made this observation, since the whole argument seems to revolve about upstream diversion depleting the flow of water over downstream dams. How can the proponents consistently contend that you can by a single stroke of legislation. irrigate 150,000 acres more land upstream and at the same time not aggravate this severely strained point?

An honest survey of this year's runoff in the Snake River watershed should prove the fallacy and unsoundness of such a proposal.

Perhaps a trifle selfishly we look apprehensively at even the Scriver Creek power diversion because fluctuations in the natural flow of the river pose for us very severe problems.

Until such time as the Bureau of Reclamation sees fit to give us a fair contract for bottom storage in Cascade Dam at a price not greatly in excess of that originally agreed on, and assurance that sufficient natural flow in the Payette River will be maintained to insure us adequate water during all seasons of the year, we will continue to oppose any Hells Canyon project that envisions upstream diversions on the Payette River to any other area.

As a final and personal observation, permit me to suggest that in view of our acute agricultural surplus problems we should never dissipate power revenues on a financially unfeasible reclamation project. Let's quit talking in terms of interest components, etc. Let's make power alone justify its existence. Let's make reclamation stand upon its own economic legs and let's not confuse the issues.

Let's be honest, realistic, and practical and with peacetime atomic development and improved agricultural practice I feel certain that Idaho can develop and prosper without the burden either of a Hells Canyon Dam or an economically unsound reclamation development.

STATEMENT OF GEM COUNTY CHAMBER OF COMMERCE, GEM COUNTY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Whereas there are introduced in Congress certain bills to authorize the construction, operation, and maintenance of Hells Canyon Dam on the Snake River between Idaho and Oregon; and

Whereas such construction and operation is contrary to the principles upon which our great Nation was founded and prospered; and

Whereas private enterprise has demonstrated its ability, willingness, and desire to develop this same natural resource with substantially the same results plus superior advantages without cost to the Federal Government; and

Whereas there is urgent need to reduce Government expenditures to achieve a balanced budget; and

Whereas those certain bills have incorporated provisions for the construction of facilities at Scriver Creek on the Payette River for the benefit of the Mountain Home division; and

Whereas there are several thousands of acres of land in the Payette Valley with favorable prospects of development at possible less cost than the Mountain Home division; and

Whereas the protection of present and future water rights of the Payette Valley is imperative: Now, therefore, be it

Resolved, That the Gem County Chamber of Commerce does strongly oppose such Government construction of Hells Canyon and Scriver Creek as proposed and that this resolution be presented to the Subcommittee on Irrigation and Reclamation in the hearing at Boise, Idaho, April 4, 1955, as evidence of sentiment of the Gem County Chamber of Commerce; be it further

Resolved, That a copy of this resolution be forwarded to each of the Idaho congressional delegation with the urge that they lend their efforts accordingly.

Duly moved by David Little, seconded by Sumner Holbrook, passed unanimously in regular meeting of Gem County Chamber of Commerce on March 28, 1955.

ROBERT J. CHAPIN,
Vice President.
BERNARD F. GRATTON,
Secretary.

STATEMENT OF GLENNS FERRY AREA KIWANIS, GLENNS FERRY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR IN BOISE, IDAHO, APRIL 4, 1955

Whereas the Hells Canyon issue is in the hands of the Federal Power Commission, the agency established by law to handle such decisions, and, that decision will be made only on fact; and

Whereas the members of the Glenns Ferry Area Kiwanis would like to register their opinion on this matter; and

Whereas this area is now capably and efficiently served electricity by a private utility company: Now, therefore, be it

Resolved, That the Federal Power Commission be allowed to make their decision in the manner prescribed by law.

EUGENE G. ROSIN, *President.*
EARL MILLS, *Secretary.*

STATEMENT OF GOODING CHAMBER OF COMMERCE, GOODING, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, IDAHO, APRIL 4, 1955

May we again call your attention to the action of the Gooding Chamber of Commerce indicated by statements and resolutions of April 19, 1949, July 10, 1952, and July 15, 1952, and now reaffirmed in an emergency meeting of the board of directors on March 29, 1955.

We believe that the development at Hells Canyon should be made by private enterprise when they are prepared and capable.

We believe that comprehensive development by the Government is largely theoretical and will more than likely prove to be untrue in fact.

We believe that private control and operation to be more efficient and economical than governmental.

We believe that the millions of dollars of taxes which will accrue to the people of Idaho through the development by private capital will greatly assist in our future growth, and which will be lost if the dam is constructed by the Federal Government.

The fact findings of the Federal Power Commission engineers proved that Idaho Power's three-dam program fully meets the test of comprehensive development and provides multipurpose facilities at the most economic cost.

For these and many other reasons we urge that the application of the Idaho Power Co., to develop these sites on Snake River be granted by the Federal Power Commission who holds this legal responsibility.

CHARLES E. SAMS, *President.*

STATEMENT OF GOODING GRANGE, NO. 138, GOODING, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, IDAHO, APRIL 4, 1955.

Gooding Grange, No. 138, again wishes to reaffirm our support of the Idaho State Grange and the Gooding County Grange in their opposition to the building of a high dam in Hells Canyon by the Federal Government.

We are deeply concerned with the protection of present and future water rights of the upper Snake River, and feel that our only real protection is for Idaho to retain control of these waters, as provided in the Idaho constitution, and allow the dams to be constructed by private enterprise, which is ready and willing to do the job.

Should these waters be turned over to the Federal Government, all control would be lost, because according to the Legislative Reference Service of the Library of Congress, "In view of past decisions of the United States Supreme Court, a constitutional amendment would be required to divest Congress of its power, and vest complete control of these water resources of navigable rivers in the States."

For the above reasons the nearly 300 members of Gooding Grange, all depending on the security of their water rights for their very existence, urge that the application of the Idaho Power Co. to develop these sites along the middle Snake River be granted by the Federal Power Commission, whose staff has, in a brief filed with the examiner, on November 24, 1954, found that Idaho Power's proposed projects are best adapted to a comprehensive plan of development of the Snake River as required by the Federal Power Act.

MYRON BLISS, *Master.*
WILMA STEELE, *Secretary.*

Thursday, March 31, 1955, Gooding, Idaho.

STATEMENT OF N. O. GRIFFITH, CLERK, GOODING CITY COUNCIL, GOODING, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The following information is for your use at the Hells Canyon hearing, and it is taken from the official minutes of the City of Gooding Council meeting, held Wednesday, March 30, 1955:

"Councilman Schmitt moved that the city council go on record opposing the construction of a dam at the Hells Canyon site by the United States Government; and be it further moved that a copy of this motion be sent to the congressional committee holding hearings in Boise."

Councilman Henry seconded the motion. Upon rollcall, Councilman Henry, Councilman Schmitt, and Mayor Crippen voted in favor of the motion. Councilman Thornton and Councilman Schoettger refused to cast a vote.

THE NAMPA CHAMBER OF COMMERCE,
Nampa, Idaho, April 2, 1955.

SUBCOMMITTEE OF SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Boise, Idaho.

GENTLEMEN: At the regular meeting of the board of directors of the Nampa Chamber of Commerce on April 1 the board directed me to make the following statement for the record in the Hells Canyon high-dam hearings to be held in Boise on April 4, 1955:

1. In the nature of things, a chamber of commerce is an association to promote the welfare of its community and free enterprise in the area of the community that the chamber of commerce serves. The spending of Government money for any project that private industry is willing to undertake, and thus using tax dollars to make competition for private industry; and by the same token curtailing tax revenues due to the Government's tax-free status, is against the basic principles of our organization.

2. Waterpower being one of Idaho's natural resources, the benefits from its use must forever be considered a property right of the citizens of Idaho. A private industry developing power on the Snake River can be held in check by the laws of the State of Idaho. Opposed to this, the bureaucrats of the United States Government being able, should they so desire, to constitutionally take

over the control of the water on the Snake River without regard to the rights of individuals or of the State of Idaho as a whole.

3. All of the power generated by any dam in or near the Hells Canyon site should be reserved for Idaho and the immediate area producing the water and adjacent to the dam site, as this is a natural resource of this area. Commitment of power, or any other resource, to a heavily populated area results in its never being returned to the people who are unable to muster enough votes to offset the heavily populated areas.

For the above and various other reasons, which will no doubt be enumerated by other groups, the board of directors of the Nampa Chamber of Commerce feels it is in the best interests of its community and the Boise Valley to ask Congress to deny any department of the Federal Government the right to build a single high dam in the Hells Canyon of the Snake River at the people's expense.

Respectfully,

A. P. HANSEN, *President.*

STATEMENT OF TED HARWOOD, MANAGER OF PAYETTE LAKES LUMBER CO., MCCALL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

As a lifelong citizen of Idaho, as a property owner and taxpayer, I am opposed to the much discussed Federal dam at Hells Canyon. There is no valid excuse for the Federal Government to spend tax money for the purpose of entering the electric-power business, or any other business, in a nation dedicated to a system of private enterprise.

Even if the high dam were economically sound, which I seriously doubt, I would not favor having tax dollars build it. The power needs of this area have been met by private enterprise for many years, and undoubtedly will be met in the future.

The Federal Government can better devote its attention to balancing the national budget and to reducing taxes.

The public-power proponents have apparently taken the position of "Federal power or nothing," and that position works against the best interests of the people who use electricity. They have obstructed the building of dams by private enterprise over a period of years, complaining meanwhile about the need for more power. Let's get the job done without expense to taxpayers.

STATEMENT BY TOM HEATH, PRESTON, IDAHO, SENATOR FROM FRANKLIN COUNTY, IDAHO STATE SENATE, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

My name is Tom Heath of Preston, Idaho. I am vice president and general manager of the Franklin County Sugar Co. We manufacture and sell beet sugar. To produce this sugar we contract and purchase sugar beets from 400 to 500 individual farmers. The value of these sugar beets is determined from the price received for the sugar sold, the price being influenced a great deal by the distance from market as we people in Idaho must, whenever possible, sell our products in a concentrated form. A major segment of our production area lies in the Snake River watershed being supplied with irrigation water from the Portneuf River which is a tributary of the Snake River. To produce a sugar beet crop requires a positive reliable supply of irrigation water and very important what we term and call "late water" available after July 1 until September 30. This late supply or lack of it many times means the difference between a profitable crop to the beet farmer and a loss. To grow sugar beets means that you also must rotate and grow other crops such as alfalfa, clover, small grains, and above that a balanced number of livestock must be fed and maintained on the farm. It is truly a diversified operation. In processing the sugar beets into sugar less than 3 percent of the total cost of sugar produced is for power and fuel. So you see power becomes secondary to irrigation water. Many parts of this area supplied by the Portneuf and Snake Rivers lacks a sufficient supply of late water. Many farmers are planning on development of storage

of water either by additional reservoirs or underground wells, both supplies of which will have to come from upstream of the Snake River. The very lifeblood of southern Idaho is its available water supply.

Our State and Federal Government in the past have recognized this. Witness the intense control of dams and reservoirs that have been built on the Snake River and its tributaries. Some of these have been built by the United States Reclamation Department and others entirely by private people, not only power people but by farmers themselves and there is still much to be done. More storage for late water is needed, more upstream dams to be built or enlarged. We must consider replenishing the underground water supply that our new wells have been drawing from. There still remains hundreds of thousands of acres of the finest, richest soil on this continent that should be brought under cultivation as the food requirements of our Nation increase.

No wonder the people of Idaho become alarmed when some proposal is made that could definitely and positively interfere with our existing and future water rights. Past congressional committees, after intensive hearings by Army engineers, reclamation and irrigation people have definitely concluded that there would not always be a sufficient supply of water to operate a federally owned and controlled high dam such as Hells Canyon. Our legal counsel and study of the national legislative law library makes it crystal clear, that should the Federal Government build a high dam at a Hells Canyon site, they could without question call for all upstream water to keep such dam in operation. They could do it and they would do it. Witness the dangerous situation that was created in the Santa Margarita case in California. Idaho citizens will not and dare not jeopardize the present water rights nor the future development of this State, unless there should be an amendment to our Federal Constitution which now says the Federal Government is supreme.

The same question of tampering with our water rights and headgates has been answered at the polls on elections several times in the past and I know it will be answered again in the same decisive manner.

And now we come to your so-called grassroots hearings, called if you please, not upstream where the Snake River is so important but downstream, a few hours in Lewiston, Idaho, where there is practically no irrigation and then on to politically important Oregon—important to whom? Why, had not our Senators Dworshak and Welker and Congressman Budge insisted, this Boise grassroot, 3-hour hearing would not have been held at all.

The Snake River travels a thousand miles in Idaho made up of the North Fork, South Fork, Blackfoot, Portneuf, Rock Creek, Boise, Payette, and Malad, and many other streams. The Snake River is Idaho and contributes the water to make it. When the Snake River reaches Oregon what do we find? The records will show that Oregon streams do not contribute 7 percent of the Snake River flow. Then why should two Oregon Senators want to make a political show of Idaho water. If they are short of power why not harness the unbridled Clearwater or Salmon Rivers which are beyond the reach of practical irrigation. We have numerous counties in Idaho, irrigated counties, that collect 25 percent of their tax moneys from powerplants that were built not by public money but by money invested by the public. Thousands of Idaho people are part owners of these plants. Do the public power advocates want to drown out three sites that can and should be built by private capital? These three privately built low-head dams will produce as much power as the proposed Government-built high dam. They will put power on the lines quicker without spending a billion dollars of taxpayers' money, and when built will contribute millions of dollars in taxes to Idaho. In our recent session of the legislature we needed more money to pay for services demanded by the people. Hells Canyon Dam will not produce tax revenue.

The failure of the committee to schedule meetings in Twin Falls, Idaho Falls, and Pocatello is a clear indication that this hearing was inspired for political benefits to someone.

Any candidate for national office in Idaho who openly advocates the building of a high dam in Hells Canyon on the Snake River without first correcting or changing our Federal Constitution so as to protect and preserve our water rights, will be defeated. It has happened in the past and it will happen again. We people in agricultural Idaho will not sit still and watch our heritage be dissipated for political hocus pocus.

STATEMENT OF HARRY N. HEWITT, EAGLE VALLEY DRUG CO., RICHLAND OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I should like to express my opinion relative to the development of Snake River Canyon as a power potential.

The Idaho Power Co. is more interested in producing power in Snake River Canyon than the Government inasmuch as this is their life's work and their energies and ability are directed to that end and is so manifested in the type of men they have working for them; they being on a competitive basis and efficiency they produce a higher type of work, and this is shown in the interest they take in community projects into the districts they are connected with.

For 30 years I have been in the drug business in the shadow of Snake River Canyon and I have watched the Idaho Power Co. establish power connections in two valleys in eastern Oregon and have also witnessed the development that followed, from backward valleys to an almost immediate forward movement; they have done a wonderful job and given the authority, they will do more for this eastern Oregon country. In the past few years this company's progress has been held up by politicians who would destroy the economy of the country in order to benefit themselves, and we taxpayers in eastern Oregon are the ones that have to pay. We need taxable property, and a private power dam is a very good start.

The Federal Power Commission should be granted enough time to study and weigh the facts on both sides of the case by men who are qualified in hydroelectric engineering to render a fair and justified decision.

STATEMENT OF ROBERT S. HOWARD, PUBLISHER, IDAHO STATE JOURNAL, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am hopeful that in your field hearings concerning the proposed high Federal dam at Hells Canyon you will give consideration to public opinion in Idaho.

The Snake River is the lifeblood of southern Idaho. We are essentially an agricultural State, dependent upon irrigation waters for our livelihood. Therefore, any proposal to use Snake waters is of vital concern to us.

It is my considered judgment that an overwhelming majority of southern Idaho residents oppose a Federal dam at Hells Canyon because (1) it has never been conclusively established that there will at any time be sufficient water flow at Hells Canyon to sustain capacity power production; (2) future irrigation needs and growing consumptive use of water for the growing southern Idaho population indicates that ever-increasing demand for Snake water will even further reduce available water at Hells Canyon; (3) expenditure of more than a third of a billion dollars for a Federal dam cannot be justified in face of questionable water supply; (4) if Federal dams must be built or authorized at this time in the Idaho portion of the Columbia watershed, consideration should first be given to sites on the Salmon or Clearwater Rivers, which are not drawn upon for irrigation use and which waters now flow, untapped, into the Columbia.

Many of us suspect that the only reason for intense pressure for immediate authorization of the Hells Canyon Dam is to preclude construction of the proposed Idaho Power Co. dams on the Snake, in the event approval is granted by the Federal Power Commission. We can reach no other conclusion in view of the fact that many good sites, including such enormous potential sites as John Day on the Columbia, are available if more power is needed for the Northwest.

It is obvious to all of us that in face of administration opposition there will be no appropriation granted in the foreseeable future for construction of Hells Canyon, for a Presidential veto is probable in the unlikely event such an appropriation is passed by the Congress. It is therefore reasonable to conclude that it is wholly wishful thinking at this time to count on Federal Hells Canyon power to fill Northwest power needs.

While our opposition to the Federal proposal is not based upon any defense of Idaho Power Co., it is significant to us that a private utility is ready and willing to build three dams on the Snake now, at no cost to the taxpayers, that will contribute directly to the tax base of this State. Moreover, this utility will sell

this power in Idaho and forestall a threatened shortage of hydroelectric power within this State.

All of these points combine to form a most effective argument against any consideration of the Hells Canyon Dam, based on concern for our consumptive water rights on the Snake, and the very questionable economics of this enormous expenditure.

STATEMENT OF HANS C. HULBE, OF BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I wish to take this opportunity to voice my opposition to the Government building a high dam at Hells Canyon with taxpayers' money.

I have always been in favor of private enterprise. The Government estimates on the projects that they have built in this area in the past have been severely out of line; that is, the estimates have been low as compared to the final costs. This I am sure is a common thing, but should not exist. I am opposed to the spending of taxpayers' money to build a high dam at the expenses estimated when private enterprise is ready and able to do the same thing cheaper.

STATEMENT OF CARL HUNTSINGER, OF KUNA, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I would like to voice my opposition to the Federal Government building the high dam in Hells Canyon. My opposition to the Government building this project is that this project should be built by the Idaho Power Co., who have the experience and know-how to build the three low dams and will build the project with funds of citizens who are willing to invest in a private enterprise.

As a farmer and taxpayer, I have lived on the same farm in Ada County, Idaho, for over 30 years.

We often hear that the Idaho Power is a vicious monopoly, but who is the power company but citizens who are willing to invest their savings in a private enterprise which pays almost one-third of its income in taxes.

As a farmer, I feel that my water rights will not be in danger if the Idaho Power is given permission to build the three dams. A farmer can invest the price of a 3-plow tractor in Idaho Power stock and get free electric service. Where else in the world could you do this? Not in Russia.

In recent years I have visited foreign countries and I am convinced that we should be willing to cherish and defend our free enterprise. And thank God I am an American.

STATEMENT OF CARROLL M. HURST, MORTGAGE BROKER, CARROLL M. HURST AGENCY, NAMPA, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

It is my conviction that the Federal Power Commission should decide the Hells Canyon issue. My conviction is based upon contacts and discussions I have had with farmers and businessmen in the Boise Valley. Having listened to the arguments before the Federal Power Commission when they held their hearing in Boise, I believe that the Federal Power Commission certainly have all the facts on the case. I believe that the decision of the Commission will be based on a comprehensive knowledge of the facts.

IDAHO FARM BUREAU FEDERATION,
Pocatello, Idaho, April 4, 1955.

To: Senate Interior and Insular Affairs Committee, Boise hearing, Boise, Idaho.
From: Idaho Farm Bureau Federation.

The Idaho Farm Bureau Federation is a statewide organization composed entirely of people who obtain their living from agriculture. This organization has a current membership of 16,320 farm families. Its principal place of business is located in the Hub Building, Pocatello, Idaho.

Its policies are discussed and recommended by the members themselves at the grassroots level. Each county unit has its own officers and official delegates to the annual official meeting of the State federation. At this annual meeting, the policies of the organization are then determined by a majority vote of the delegates after full hearing and discussion. Such policies then become the program of the Idaho Farm Bureau Federation.

Our position on Hells Canyon is reflected in the following resolutions:

RESOLUTION No. 10

(Adopted at 1953 convention, Boise, Idaho, December 5, 1953)

We resolve, That the Idaho Farm Bureau Federation reaffirm our stand against Hells Canyon and take no further action until the findings of the Federal Power Commission at their present hearings have been evaluated and studied.

RESOLUTIONS No. 45, 46, AND 47

(Adopted at 1954 convention, Idaho Falls, Idaho, December 1, 1954)

Whereas any development of our rivers or streams such as power plants, reservoirs, bird refuges, recreation areas, either by government or private enterprise, can and will affect irrigation: Be it

Resolved, We, as the Idaho farmers, ask that the State and Federal Governments completely protect our irrigation rights in any project.

Whereas Farm Bureau has long resisted the centralization of government and the present trend to give the Government more authority, which, in our opinion, will in a few short years take away our free enterprise system: Be it

Resolved, That the Idaho Farm Bureau aggressively support the development of our natural resources by private enterprise when practical and feasible.

We recommend to the State of Idaho and the Federal Government a policy of storing water in upstream areas rather than by large downstream dams.

Under the 1953 resolution cited above, the Idaho Farm Bureau must oppose any further action until the findings of the Federal Power Commission have been studied and evaluated.

We feel that a congressional committee does not have the necessary time and experience to give thorough study to the technical material of this case.

After a year-long hearing and study by the Federal Power Commission, during which time over 19,000 pages of testimony were accumulated, it does not seem economically wise, nor fair to the American people to disregard these records and findings, with continued hearings which tend to confuse the issue.

Under the 1954 resolution, the Idaho Farm Bureau must aggressively support the development of our natural resources by private enterprise when practical and feasible; and under resolution No. 47 we recommend a policy of storing water in upstream areas rather than by large downstream dams.

In the light of the above cited resolutions, we feel that the meetings on Hells Canyon called at this time are untimely, poorly located, and will serve no beneficial purpose.

We therefore recommend that the Hells Canyon problem be left in the hands of the Federal Power Commission for their recommendation.

Respectfully submitted.

JOHN H. WEBB, *Executive Secretary.*

STATE OF IDAHO,
County of Bannock, ss:

This is to certify that Melvin Oppliger, a member of the board of directors of the Idaho Farm Bureau Federation, is hereby authorized to appear before the Senate Interior and Insular Affairs Committee at the Hells Canyon hearings in Boise, Idaho, April 4, 1955, for the Idaho Farm Bureau Federation.

JOHN H. WEBB, *Executive Secretary.*

STATEMENT OF IDAHO MINING ASSOCIATION, BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The Idaho Mining Association, representing all branches of mining in Idaho, pledges a full effort to this end and calls for the cooperation of all other industries in the State. This association adheres to the principle, "only the productive can be strong and only the strong can be free."

SNAKE RIVER DEVELOPMENT

The economic development of Idaho, including its great mining industry, has been based upon the principle of private enterprise and the investment of taxpaying capital. We note with approval the program of development of power on the Snake River north of Weiser through a series of medium-height dams to be constructed by private agencies. Such a project will furnish needed power for mining enterprises throughout central Idaho and will materially aid in the industrial development of our State. We urge upon the proper Federal authorities the granting of permits for construction of these dams and we ask our representatives in Congress to use their efforts to bring this about.

We especially commend the Honorable Douglas McKay, Secretary of the Interior, for his stand in withdrawing his Department's objection to the issuance of licenses by the Federal Power Commission to a private corporation. We believe this is a long step forward in the preservation of the American system of free enterprise.

HARY W. MARSH, *Secretary.*

RESOLUTION OF THE IDAHO POTATO STARCH CO., OF BLACKFOOT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Whereas this corporation is dependent for its existence upon the products of the irrigated farms of Idaho; and

Whereas a group of approximately 1,000 representatives of water districts throughout the Snake River Valley from the Oregon line to the Wyoming border oppose the construction of the proposed high dam at Hells Canyon; and

Whereas in the opinion of this corporation the construction of said dam would be detrimental to the people of the State of Idaho: Now, therefore, be it

Resolved by the board of directors of Idaho Potato Starch Co., That said corporation, its officers, directors, and shareholders protest the construction at public expense of the proposed Hells Canyon Dam.

STATE OF IDAHO,
County of Bingham, ss:

I, J. H. Andersen, the duly elected, qualified, and acting secretary of Idaho Potato Starch Co., a corporation, do hereby certify that the above and foregoing is a full, true, and correct copy of a resolution adopted at a regular meeting of the board of directors of Idaho Potato Starch Co. held at Blackfoot, Idaho, on the 1st day of April 1955.

In witness whereof I have hereunto set my hand, attested by the seal of said corporation, this the 1st day of April 1955.

J. H. ANDERSEN, *Secretary.*

IDAHO POWER CO.,
Boise, Idaho, April 4, 1595.

MY DEAR SENATOR MURRAY: In response to the kind invitation of your committee, I am pleased to submit for the record the following statement on behalf of Idaho Power Co.:

It is my understanding that the committee has ruled that the present hearings are limited to nontechnical matters and that evidence as to the technical

aspects of the development of the Hells Canyon reach of Snake River will be received only at a hearing to be held in Washington at some later date.

As you are advised, Idaho Power Co. has pending before the Federal Power Commission applications for licenses for the construction of the Brownlee, Oxbow, and Hells Canyon projects under the terms and conditions expressed by Congress in the Federal Power Act.

These plants will have an initial installed capacity of 783,400 kilowatts, with peaking capability of 900,800 kilowatts. Provision will be made for ultimate capacity installations of 1,175,100 kilowatts, to provide in excess of 1,300,000 kilowatts of peaking capability. The powerplants will utilize the full head and flow of the river, as the Brownlee plant will operate with little or no loss of dependable capacity due to reservoir drawdown.

These are not small or "pygmy" dams that the company is proposing. Oxbow will be nearly double and Brownlee more than four times the height of the Government dam at Bonneville. The company's Hells Canyon Dam will be 46 feet higher than Niagara Falls.

The economics of the company's proposed development and the low cost of power therefrom is indicated by the fact that the cost of the 3 projects will average only $169.75 per kilowatt of installed capacity. Our construction cost estimates have been verified by the world-renowned and highly competent construction firm of Morrison-Knudsen Co., Inc., and their confidence in these costs is evidenced by their firm offer to build and complete the projects at a cost of $133 million, as presented in sworn testimony before the Federal Power Commission.

Idaho Power Co. is ready to commence construction of the projects within 60 to 90 days after authorizations are obtained. At Oxbow the first generating unit could be in service within 20 months and the entire project completed in 24 months. Actually, if construction can begin in time to divert the river by the 1st of August the entire Oxbow development can be completed and on the line in 12 months. The Brownlee and Hells Canyon projects can be completed in 30 months; and if all 3 projects are constructed concurrently, they can be completed and in service in 38 months from the date of starting the first project. This compares with a minimum of 7 to 10 years which would be required to build the Government dam at Hells Canyon, even assuming that appropriations are available as needed to meet the half a billion dollars that the single dam would cost.

The company's projects will develop the full head in the Hells Canyon-Weiser reach of Snake River, and the Brownlee Dam will provide 1 million acre-feet of storage which can be filled and used every year, for power, flood control, and navigation purposes. We believe that the evidence submitted to the Federal Power Commission conclusively shows that this is the largest amount of economical storage that can be provided, or is required in this reach of the river for the reasons (1) that the Snake River, above the Salmon and Clearwater, is already one of the most completely controlled rivers in the Nation; (2) additional major annual storage of approximately a million and a half additional acre-feet is nearing completion at the Lucky Peak (Army) and Palisades (USBR) Dams; (3) the pressing need and plans for additional upstream storage both for irrigation use and local flood-control protection; and (4) the substantial depletion in streamflow that is bound to occur from future upstream pumping and river diversions for additional irrigation.

These powerplants, together with our existing interconnected system, will be fully integrated, both electrically and hydraulically, with the Northwest power pool system, and thus not only supply the rapidly growing powerload in southern Idaho and eastern Oregon, but contribute materially and promptly in supplying critically needed power in other Northwest areas.

The company's proposed development will be constructed with investor capital and without the use of taxpayer funds, thereby releasing Federal appropriations for other much-needed developments. In addition, it will pay taxes estimated at approximately $10 million each year to the Federal and State governments, and to local governmental subdivisions. Of this amount, approximately $4 million will be paid in taxes to State and local taxing units, and the balance will go to the Federal Government. Thus, over a 50-year period, the company's proposed developments will contribute approximately half a billion dollars in taxes for governmental needs.

Following a full and extended hearing before the Federal Power Commission, which occupied more than a year, the case was finally submitted last July 9, and briefs have been filed. At the hearing all parties were given full opportunity to be heard—proponents of the proposed Federal dam at Hells Canyon, as well

as witnesses in support of the company's plan of development. Some 400 technical exhibits were introduced, and the hearing record comprises 158 volumes, consisting of nearly 20,000 pages. Numerous representatives of various governmental agencies appeared as witnesses and all published reports of governmental agenies, relating to the subject, are either before the Commission or available to it for its study and consideration. We believe that the evidence before the Commission, as presented by the company and independent witnesses, fully establishes that the company's plan of development fully meets the tests specified by Congress in the act, and is the soundest and best plan for the area and for the Nation.

It is our understanding that there will be a further hearing, at which engineering, power production, and other technical and factual evidence may be presented. We respectfully request an opportunity for a full presentation of such matters at that time, and will be glad to have the opportunity to submit the company's witnesses, exhibits, and other evidence to full cross-examination as to all aspects of comprehensive development which the company's program will provide.

Very truly yours,

T. E. ROACH.

STATEMENT OF WILLIAM E. ADAMS, MASTER, IDAHO STATE GRANGE, EAGLE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

My name is William E. Adams; I live at Eagle, Idaho, and I am master of the Idaho State Grange.

The Idaho State Grange, through action of its delegates in four consecutive State conventions, has voted its opposition to impairment of the water rights of Idaho citizens under legislation introduced in the Congress calling for construction by the Federal Government of a high dam at Hells Canyon. Complete copies of the resolutions adopted at these four meetings are made a part of this statement in opposition.

As it was so clearly stated in the 1952 resolution "The Idaho Constitution and Idaho water laws provide safeguards of the irrigation water supply as to parties and persons over whom the State of Idaho has jurisdiction, but does not provide protection as to the Federal Government or any of its agencies * * *. Those safeguards apply when Snake River is developed by private enterprise but have no standing if a Federal hydroelectric project is constructed on the river."

It has been clearly demonstrated that no action short of an amendment to the Constitution of the United States can assure Idaho of freedom from possible adverse action in the allocation of water from the streams of the State. Therefore, on behalf of the Idaho State Grange, and acting under directed authority expressed in the resolutions which follow, I wish the record to show that the Idaho State Grange is unalterably opposed to legislation now pending calling for construction of a Federal dam at Hells Canyon since it fails to afford adequate protection to the vital water resources of the State of Idaho.

Actions approved and adopted by the delegate body of the Idaho State Grange in the four most recent annual sessions:

Burley, Idaho, 1951—Report of Irrigation and Reclamation Committee:

RESOLUTION NO. 6—OPPOSING HELLS CANYON DAM

"Whereas the Bureau of Reclamation has proposed that it be authorized to build a high dam at the Hells Canyon site at an estimated cost of about $433 million for the production of about 800,000 kilowatts; and

"Whereas the Idaho Power Co., is ready and willing to develop 695,000 kilowatts, in 5 low-head dams covering the same section of Snake River Canyon, at a cost of $176 million through private financing; and

"Whereas private enterprise financed by private funds would be able to produce power at an estimated cost of $253 per kilowatt compared to $417.48 per kilowatt financed by public funds on a Government project; and

"Whereas since there is no present shortage of power in the Snake River Valley the Bureau of Reclamation proposes to sell most of the power that a high dam would develop in the distant Northwest while the five low-head dams would be built as the inland empire developed; and

"Whereas five low-head dams built by private enterprise would contribute under present rates approximately $3 million annually in ad valorem taxes to the local area while a Government dam would contribute nothing; and

"Whereas since any dams built in this location would be purely power dams and would produce no benefits in the way of reclamation or irrigation they might retard the development of the desert area above the power location by demanding water which could be used elsewhere for irrigation; and

"Whereas we are opposed to the Government entering into competition with private enterprise: Now, therefore, be it

"*Resolved*, That, we go on record as opposing the proposed Hells Canyon Dam as planned by the Bureau of Reclamation."

Adopted.

Coeur d'Alene, Idaho, 1952:

HELLS CANYON

It was moved by Merlyn C. Gersma, master of Central Park Grange, that this delegate body reaffirm their 1951 action on Hells Canyon Dam as follows:

"Exactly the same resolution as was adopted at the 1951 session."

Adopted.

Nampa, Idaho, 1953—Report of the Irrigation and Reclamation Committee:

RESOLUTION NO. 14—DEVELOPMENT OF THE SNAKE RIVER

"Whereas full utilization of the irrigation, reclamation, and power resources of the Snake River is essential to the continued development and prosperity of Idaho agriculture; and

"Whereas water is the lifeblood of Idaho agriculture, and any curtailment of the supply would work to the great detriment of farmers and their families, both on lands presently irrigated and more than a million acres of potentially productive lands yet to be reclaimed; and

"Whereas the Idaho Constitution and Idaho water laws provide safeguards of the irrigation water supply as to parties and persons over whom the State of Idaho has jurisdiction, but does not provide protection as to the Federal Government or any of its agencies; and

"Whereas those safeguards apply when Snake River is developed by private enterprise but have no standing if a Federal hydroelectric project is constructed on the river; and

"Whereas private enterprise with taxpaying capital is prepared to bring about the immediate development of Snake River in a manner best meeting the needs of public interest by construction of Oxbow, Brownlee, and Hells Canyon Dams. under terms contained in the license applications and testimony presently before the Federal Power Commission; and

"Whereas the United States Department of the Interior has announced that the proposed Federal dam at Hells Canyon would have no physical connection with any reclamation project, that the Federal project is not authorized and that there is small probability of funds for its construction being available for several years, while it is important to the area that power production be obtained rapidly; and

"Whereas the United States Department of the Interior has further announced that the Federal cost per kilowatt would be more than 2½ times that required for private development; that the 2 proposals would develop the same hydraulic head for power production and that the flood-control benefits would be the same: Now, therefore, be it

"*Resolved*, That we reaffirm our previous resolutions and again go on record as opposing the Hells Canyon Dam as proposed for construction by the Federal Government." (Resolution sent in by Twin Falls Grange in Twin Falls County.)

Adopted.

RESOLUTION NO. 22—OPPOSED TO HELLS CANYON

"Whereas there has been submitted to us by the State grange a list of resolutions that will be up for consideration by the next session of the State grange to be held in Nampa, Idaho, in December 1953; and

"Whereas a certain resolution sponsored by the Deary Grange covers the subject of endorsement of Hells Canyon Dam; and

"Whereas this subject has been before the State grange of Idaho a number of times in the past and after full consideration of the subject by the delegate bodies

of the State grange the subject of Hells Canyon Dam has been defeated each time it was presented; and

"Whereas this subject has been twice turned down by congressional committees after most extensive and careful consideration; and

"Whereas the subject is now before the Federal Power Commission on hearings in which a large volume of testimony presented showed that the farming industry of southern Idaho considers it will be irreparably damaged and destroyed should the water of Snake River be diverted from irrigation use to development of power at Hells Canyon; and

"Whereas in a number of years the flow of the river was not sufficient to take care of present irrigation needs, let alone enough to take care of prospective further irrigation developments which must be taken care of with water of the Snake River; and

"Whereas agriculture is the basic industry of the State of Idaho and thousands of grange members of our State are directly involved as irrigation farmers using Snake River water; anything that would hurt their interests is of extreme importance to the State of Idaho and to the Idaho State Grange: Now, therefore, be it

"*Resolved*, That we go on record as opposing the resolution of Deary Grange favoring Hells Canyon; and be it further

"*Resolved*, That the State grange having repeatedly acted in opposition to the question, that in the interest of peace and harmony among grangers that this controversial question be dropped as a matter before this State grange session."

(Resolution sent in by Mapleleaf Grange in Kootenai County.)

Adopted.

Twin Falls, Idaho, 1954—Report of the irrigation and reclamation committee:

THE HELLS CANYON CONTROVERSY IN THE IDAHO STATE GRANGE

"Whereas the Idaho State Grange is composed of a general representation of the agricultural people of the State of Idaho, and

"Whereas it is the duty of this broad and general representation of the agricultural people of Idaho to set forth, in general principles, their requirements regarding this controversial issue, and

"Whereas the action taken by the Idaho State Grange should be of a nature such that our feeling of fraternal brotherhood in our Grange should not be jeopardized, and

"Whereas the Idaho State Grange in effect has been directing a school of thought which has become a partisan political issue and to press this issue further would only lead to additional dissention on the part of members who have the opposite political view, and

"Whereas the issue of Hells Canyon is a composite of several issues rather than one, which, in rules of parliamentary law and fairness to reason, should not be grouped as a single issue: Now, therefore, be it

"*Resolved*, That the controversial issue of public power versus private power be omitted from the work of this session of the Idaho State Grange; and be it further

"*Resolved*, That the Idaho State Grange go on record as favoring the development of the bountiful natural resources of the State of Idaho to the greatest intensity that is economically feasible, provided that in doing so the water rights of the people on the Snake River watershed be guaranteed an undisputable prior right to all future claims to water flowing or stored in the Snake River or in its tributaries—be the claims from public power or from private power sources."

Report adopted.

STATEMENT OF THE IDAHO STATE CHAMBER OF COMMERCE, BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Opposition of the Idaho State Chamber of Commerce to Federal construction of a dam at Hells Canyon on Snake River on the Oregon-Idaho boundary rests primarily upon the basic belief that Government should not assume proprietary functions, should not imperil the water rights of the citizens of the respective States, and should not, by expanding its competitive activities in fields that

should be left to private enterprise, deprive the States of taxable, wealth-producing investments.

On each of these counts we believe S. 1333 merits opposition, particularly since overwhelming legal precedent supports the contention that no congressional action can guarantee Idaho water rights against future adverse action by the Federal Government.

Our organization, representing all phases of the economic life of Idaho, has consistently supported the programs of the several States of the Columbia River Basin in a coordinated plan under which private enterprise, local, State, and interstate governmental bodies would carry forward the necessary program in the above named order of responsibility, with participation by the Federal Government "only when the collective action of all of the people of the Nation is necessary for accomplishment of the objectives."

Attest: EARL W. MURPHY, *Secretary.*

STATEMENT OF SENATOR WILLIAM A. JACKSON, GOODING COUNTY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I, William A. Jackson, farmer and State senator from Gooding County, am opposed to the Federal Government building a high dam in the Hells Canyon area, with tax dollars, when private enterprise with private money is ready, willing, and able to make a completely comprehensive development of the same area, in a 3-dam project, which will pay tax dollars into the State and local treasuries. I also believe that Congress cannot guarantee water rights on the upper Snake River, if the high Hells Canyon Dam is built, without an amendment to our Federal Constitution.

STATEMENT OF GROVER W. JENSEN, NEW SWEDEN, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I would like to impart a few facts in a modest endeavor to clarify some of the grassroots opposition to the power dam at Hells Canyon. It isn't likely at the Senate committee hearing in Boise, April 4, that the grassroots farmer personally will have a chance to be heard.

Three years ago a farm organization of approximately 15,000 members in Idaho conducted a poll to obtain members' opinions on the Hells Canyon project. Previous to the poll copies of the bill to authorize construction of the dam were sent out to all local and county chairmen and secretaries for discussion. The vote showed more than 12 to 1 against the proposed dam.

This year more than a thousand representatives of the water districts throughout the Snake River Valley adopted a resolution at Idaho Falls opposing the building of the high Hells Canyon Dam. This is the sentiment of the grassroots which the Senate committee is seeking at Boise on April 4.

A few years ago hearings conducted by the Bureau of Reclamation, Army engineers, and other committees to authorize Hells Canyon Dam was rejected, because proof of the water in the Snake River was not available for such a project.

If the dam were constructed below where the Salmon River and the Clearwater River enter the Snake River it would supply power and help to solve the floodwaters in the lower Columbia River Basin because almost all of the floodwaters originate in the Salmon and Clearwater Rivers.

The grassroot farmers in the irrigated areas of the Snake River Valley could never feel confident that their water would not be subject to Government control for power purposes, if the dam at the Hells Canyon site is constructed. What value will this power be, if we have no water to raise a crop? In the columns of a local paper one of the Members of Congress from Idaho said the administration's action in the Hells Canyon case is a do-nothing, under the fancy title of private enterprise.

What have we done under the existing agencies? In Idaho we have brought under irrigation 2,500,000 acres of land, and we have built reservoirs whose total storage capacity is 5,500,000 acre-feet. In the Western States since 1902 we have constructed 78 projects, built 179 dams with a capacity of 69 million acre-feet. We have built five of the largest concrete dams in the world. We have electrified

95 percent of our farms in Idaho compared with about 56 percent in the TVA territory. Under the free-enterprise system the United States produces more than 300 billion kilowatt-hours each year, which is more than all the rest of the world. Under this free-enterprise system, with only 6 percent of the world's population and area, we have almost 3 times as many motor vehicles and more students in our State universities than all the rest of the world, more paved highways, telephones, and innumerable conveniences.

The Government's public power competition with private enterprise should be entered only if private companies do not offer, at a reasonable price, the service needed by our people. Aside from the cost involved, there is a great principle involved; that is the question of Government in business, any kind of business. Any departure from this principle is a move toward destruction of private enterprise, which has been a cherished principle of our people.

STATEMENT OF CARL D. IRWIN, PRESIDENT PRO TEMPORE, IDAHO STATE SENATE AND SENATOR FROM TWIN FALLS COUNTY, KIMBERLY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

My first and basic objection to the building of a high Federal dam at Hells Canyon is that the instant that the dam is completed we know that the first function of the Snake River will be to fill that reservoir each and every year.

We know that the Federal Constitution provides the Federal Government with the authority to make that demand if necessary and it would be necessary.

That means that all present and future users of water from the Snake River would be changed from first priority to second priority and that in spite of and contrary to our Idaho laws.

My second objection is that since the floodwaters of the Snake River are already under control or in final completion of control through reservoirs, the need for flood control is meaningless as far as the Snake River is concerned.

Therefore, if it is necessary to have a high dam, why not build it where it could pick up and control floodwaters from other streams that are a menace and need control and store water that no one has been able to put to use?

That method would provide both flood control plus electric energy, plus the electric energy provided by private power at Hells Canyon.

My others reasons are that I think it morally and economically wrong, under existing circumstances, to in any way hamper or jeopardize the full development of an agricultural empire that is second to none in the world. It has proven itself in 50 years of development.

It is presently developing the use of underground water for irrigation that has previously contributed to the flow of the river. This amounts to more than 400,000 acres and vast areas yet to be developed. Without water this is worthless desert land.

Any unused water would still be utilized wherever the dam was built below Hells Canyon.

I believe the whole proposition is a fight between Federal-power advocates and private power and that in this instance if the Federal-power advocates win it will be completely at the expense of the taxpayer and future growth of southeastern Idaho.

STATE OF IDAHO,
County of Jerome, ss:

I, J. S. Keel, Jr., do hereby certify that I am the duly appointed, qualified, and acting secretary of the Jerome Chamber of Commerce and as such am the official custodian of all the records and files of said chamber of commerce and keep the minutes of all meetings of the membership of said organization.

That on the 30th day of March 1955 a regular meeting of the members of said organization duly and legally called and held and at such meeting a resolution attached hereto was duly adopted by the unanimous vote of all members present. That at said meetings were 38 members in attendance.

I further certify that at said meeting Guy Simons, E. E. LaTurner, and John Woolley were duly appointed and designated to represent said chamber of commerce at the joint congressional hearing on the Hells Canyon Dam issue to be held in Boise, Idaho, on the 4th of April 1955 and to present said resolution

to said meeting and to cast any vote or take any action on behalf of the said chamber of commerce in support of said resolution at said hearing.

In witness thereof, I have hereunto set my hand this 31st day of March 1955.

J. S. KEEL, Jr.,
Executive Secretary.

Whereas, heretofore, during the year 1952 the Jerome Chamber of Commerce formally went on record endorsing the application of the Idaho Power Co. for a permit to construct a dam and powerplant in the Snake River at what is known as the Ox Bow site, by resolution, a true copy whereof marked "Exhibit A" is attached hereto and made a part hereof; and

Whereas there is now pending in Congress bills proposing to appropriate sufficient funds for the construction of a high dam at what is commonly known as Hells Canyon site in the Snake River Canyon; and

Whereas the Federal Power Commission has concluded hearings on the application of the Idaho Power Co. to construct three low-head dams in that part of the Snake River Canyon lying above the site of the proposed Government high dam at Hells Canyon, which said application has not been as yet acted upon by the said Federal Power Commission and a decision reached; and

Whereas it is the opinion of competent legal authority that in the event the Federal Government should erect the proposed high dam at the Hells Canyon site for the alleged purpose of promoting flood control, navigation, generation of power, and irrigation that the rights of upriver users of the waters of Snake River and its tributaries for irrigation purposes would be jeopardized; and

Whereas the economy of the State of Idaho, particularly that part thereof dependent for its livelihood upon receiving the use of the waters from Snake River for irrigation purposes, is entirely dependent upon an assured constant flow of Snake River water for irrigation purposes; and

Whereas there is every reason to believe that the primary purpose of said proposed high dam at Hells Canyon is the generation and distribution of power and that the other alleged purposes contained in the act authorizing the construction of said proposed dam are fictitious and not seriously contemplated by the advocates of said high dam, but that such purposes are included among the authorized purposes for such construction in order to alleviate doubts and fears of uprive users of Snake River water; and

Whereas Snake River from the confluence of Salmon River upstream is the best controlled river in the United States, insofar as potential flood damage is concerned, and that purpose cannot be used as justification for the construction of said proposed dam; and

Whereas the Idaho Power Co., whose application for permit to construct three low-head dams in the area to be flooded by the high dam, has constantly provided more than adequate power and service for all present and reasonably anticipated future users of power in this area, at prices far below the national average; and

Whereas there is every reason to believe that the Idaho Power Co. can have its proposed dams and generating facilities constructed, installed, and in operation many years earlier than can the Federal Government have its Hells Canyon Dam and generating facilities completed and ready for service; and

Whereas the undersigned chamber of commerce believes the economy of the United States will best be served by permitting and encouraging orderly development of public-utility functions by private enterprise, properly regulated, when such private enterprise is financially able to provide such services; and

Whereas the Idaho Power Co. has furnished satisfactory evidence to the Federal Power Commission of its present ability to finance the development of the power potential of the Hells Canyon strength of the Snake River and to provide the required distribution facilities; and

Whereas the potential power development of the Idaho Power Co. proposal is approximately as great as that of the proposed high dam and the per kilowatt cost of installed capacity is much less than that of the proposed high dam; and

Whereas a substantial property valuation would be placed upon the tax rolls of both the State of Idaho and the State of Oregon if the application of the Idaho Power Co. should be approved, which said valuation would be lost, for tax purposes, should the high dam be constructed, and, in addition to the property tax loss, there would be a tremendous loss of income-tax revenue to both the Federal and State governments involved should the Government dam be constructed; and

Whereas the potential use of the storage waters impounded by said dams for recreational facilities would be as great under the Idaho Power Co. proposal as under the high-dam proposal, if not greater: Now, therefore, be it

Resolved, That the Jerome Chamber of Commerce vigorously opposes the appropriation by the Congress of the United States of any moneys for the construc-

tion of the proposed Hells Canyon Dam and favors the granting of permits by the Federal Power Commission to the Idaho Power Co. to proceed immediately with the construction of the three low-head dams applied for.

JEROME CHAMBER OF COMMERCE, JEROME, IDAHO

Whereas the Idaho Power Co. has filed an application with the Federal Power Commission for a permit and license to construct a hydroelectric dam and powerplant across the Snake River at what is commonly known as the Oxbow site; and

Whereas the Secretary of the Interior has protested the granting of such application on grounds that such proposed construction would interfere with and jeopardize the building of the Hells Canyon Dam; and

Whereas the Idaho Power Co has pioneered the development of the generation and distribution of the electric power in southern Idaho and eastern Oregon and has always been ahead of the need for power in the area served by it and has at all times been able to provide adequate power for all industrial and domestic needs of this area at costs substantially below the national average for electric power and in addition has established a research department making available to all users and potential users of power in this area a staff of competent industrial engineers and has done much toward bringing new industry to this area; and

Whereas it is the belief of the Jerome Chamber of Commerce that the economic growth and development of this area will be best provided by permitting private industry and capital to expand and provide facilities for the development of the national resources of the area in preference to depending upon Government and its inefficient and expensive methods; and

Whereas there is great danger that a substantial portion of the power which might be developed from the proposed Hells Canyon Dam would be diverted to the Pacific coast in preference to being made available for the development of Idaho: Now, therefore, be it

Resolved by the Jerome Chamber of Commerce, That we strongly endorse the application of the Idaho Power Co. for a permit to construct its proposed dam and powerplant at the Oxbow site and recommend that the protests of the Secretary of Interior be dismissed and said application of the Idaho Power Co. be granted.

A. V. HALL, *President.*

Attest:

J. S. KEEL, JR., *Executive Secretary.*

STATEMENT OF KIWANIS CLUB OF JEROME, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The Kiwanis Club of Jerome, Idaho, at a regular meeting held March 24, 1955, passed the following resolution:

Whereas the Kiwanis Club of Jerome, Idaho, favors the development of power resources by private, taxpaying capital; and

Whereas said organization believes in the promotion of private industry and initiative; and

Whereas it is our firm belief that the use of public funds and resources should be strictly relegated to and limited to fields of development where private capital, initiative, and industry cannot or will not venture; and

Whereas we recognize that Government intervention has now been withdrawn from the Idaho Power Co. applications in Hells Canyon and the present opposition is supposedly private, we also recognize that such opposition is not advancing a competing private proposal, but is basing its entire position upon a wishful proposal for the expenditure of public funds; and

Whereas such opposition has no competing private proposal to offer, but is using delaying and dilatory tactics to hinder the granting of the only bona fide proposal presently before the Federal Power Commission: Now, therefore, be it

Resolved, That the Kiwanis Club of Jerome, Idaho, deplores the unwarranted license granted the sham opposition in delaying the only bona fide proposition presently before the Federal Power Commission; and be it further

Resolved, That in the absence of any other legitimate proposal for the development of the same resources by private industry and capital, and in the absence

of any governmental intervention, the Federal Power Commission must immediately grant the permits applied for to Idaho Power Co. without further delay or procrastination.

H. L. WALLINGTON, *President.*

STATEMENT OF ALBERT S. JOHNSON, OF POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I own and operate 2 irrigated farms and 1 dry farm in Bannock County, State of Idaho (of which I have been a resident for 35 years). This consists of 11,000 acres of range rights, 1,400 acres of dry land, and 700 acres irrigated land. This operation is carried on by myself and two sons.

I am quite concerned about the Hells Canyon bill now before Congress and the effect it will have on the future of southeastern Idaho. I therefore believe—

1. That orderly development of an area is necessary and we have developed our area in an orderly manner through private industry.
2. The bill on the high dam at Hells Canyon does not give State protection to the water rights within the State.
3. The Federal Power Commission should be allowed to give its decision on the pending application which is before it without interference from Congress.

STATEMENT OF MR. L. C. JOHNSON, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

As a citizen of Idaho, and owner of two irrigated farms in the upper Snake River Valley, I feel that the best interests of the people of our State would not be served by the construction of Hells Canyon Dam.

It appears to me that the present private-power interests of Idaho have always done a very fine job in servicing our people, and are fully capable of developing power to meet future needs.

It is my understanding that there will be no new land below Hells Canyon Dam that will be irrigated because of the construction of that facility, and that a good part of the power would be, if that dam was constructed, diverted away from Idaho.

Idaho is attempting to develop industrially, and it will need water in order to obtain power, as it is the dream of our people that someday the State will be dotted with factories, and we would be habitated by a much larger population, this would, of course, be impossible, particularly in the upper Snake River Valley, if the rights were already established downstream.

Therefore, it appears that the construction of Hells Canyon Dam would not serve the best interests of the State in agricultural development, or industrial expansion, which causes me to oppose the construction of this dam.

STATEMENT OF STERLING E. JOHNSON, OF PARMA, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

My name is Sterling Johnson, I reside at Parma, Idaho, where I am engaged in growing and shipping of agricultural products. My mother, brothers, and myself own and operate approximately 1,200 acres of irrigated land situated in and around Parma. Being engaged in agriculture I am primarily interested in the Hells Canyon controversy from an irrigation standpoint. Irrigation is the lifeblood of the Snake River Valley. Without it, our lands would revert to desert and sagebrush.

The use of these irrigation waters is guaranteed to us under State law by what are called water rights, which are based on priority. The Hells Canyon bill, as I understand it, in no way guarantees or protects these water rights under which we exist. Neither does this bill make any provision for water rights which in the future might be allocated to lands within the State of Idaho which can readily be developed into productive farmlands.

There are thousands of acres in the Snake River Valley which are rich in fertility but cannot be developed without a guaranty of ample irrigation water. Under the Hells Canyon bill, if the waters of the Snake River are needed for the development of power these rich lands would forever lay idle. As a farmer of Idaho, I want the same protection, with regard to my irrigation rights, from the Federal Government as I now enjoy under State government.

Generally speaking, Hells Canyon Dam is to be erected primarily for power-producing purposes. It serves no purpose from an irrigation or reclamation standpoint as there are no lands below it to be irrigated. From a flood-control standpoint, it is not a necessity, due to the fact that the Snake River has never contributed to any extent in any flood along its course or below it.

At this time with the public debt as great as it is, and with the prospect that it will continue to mount, I certainly cannot see the expediture of public funds for the construction of a dam, which is to be built primarily for power purposes, when private capital is willing and able to produce approximately the same amount of power without cost to the taxpayers of the United States. If the Federal Government feels that it has money to spend on a dam, why not locate such a dam further down the Snake River where it can utilize waters of the Salmon River which are not needed for irrigation, and which have in the past been known to contribute to flood conditions further downstream.

Let's leave the waters of the Snake River above Hells Canyon for irrigation of present lands and for the development of future lands which may be vitally needed for the production of food in years to come.

STATEMENT OF A. R. KAUFMAN, TWIN FALLS TRACT FARMER, BUHL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am opposed to the construction of a Federal dam at Hells Canyon on the grounds that the interests of all concerned would be better served by private development of the resources.

STATEMENT OF MR. AND MRS. CLARK L. KESLER, BLACKFOOT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

As long-time residents of Bingham County, I would like to express the viewpoint of myself and my wife in regard to the Hells Canyon issue.

We definitely feel the high dam would be most unfair to the water users of the upper Snake River Valley, and also most unfair to the taxpayers of 46 of the 48 States of the Union (the benefactors being only Washington and Oregon).

STATEMENT OF HENRY F. KOCH, OF BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

You may add my name to those who are opposed to the construction of a high dam at Hells Canyon. I am owner of a farm, and am interested in several retail business ventures. I am a native Idahoan—was raised in the small town of Hammett on the Snake River, where irrigation was the lifeblood of our economy—so much so that when the "ditch broke" even food on the table became less plentiful.

Therefore the construction of Hells Canyon Dam by the Government is a contradiction of so many things I believe right.

I believe:

1. That private enterprise should always be allowed to prosper, grow, and produce without competition from the very Government it supports.
2. That priority of water of the Snake first of all be assigned irrigation.
3. That because a goodly share of the water of the Snake River comes from the watersheds of Idaho, Idaho must first be considered in advantages that accrue from its waters either irrigation or power.
4. That surely we must not sit idly by and see one of our State representatives and a few others from adjoining States in the Federal Congress connive with

others so that the power of the Snake River be apportioned to other States of the Northwest through the construction of a Government high Hells Canyon Dam; thus forever making impossible the continued orderly development of our lands in southern Idaho.

The Idaho Power Co., not by words but by deeds, and over a good many years has demonstrated that the things above in which I believe, are the same as those they practice.

STATEMENT OF E. E. LATURNER, REPRESENTATIVE FROM JEROME COUNTY, IDAHO HOUSE OF REPRESENTATIVES, JEROME, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I definitely oppose the Hells Canyon high dam for the following reasons:

Experience has proved that costs of construction have always far exceeded the engineers' estimates. A Federal dam with Federal control would jeopardize the water rights of Idaho citizens. Water is the lifeblood of Idaho, and we cannot exist unless the water rights are controlled by the State. On two occasions Idaho voters have voted against Hells Canyon Dam. Idaho's position is known. In my opinion, the present bills in Congress have no purpose but to delay the final decision of the Federal Power Commission.

STATEMENT OF WORTH S. LEE, OF MOUNTAIN HOME, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, AT BOISE, IDAHO, APRIL 4, 1955

I believe the Federal Power Commission should be allowed to decide if it is to the best public interest for the Idaho Power Co. to construct the three projects they have applied for in the Hells Canyon area, as the taxes they pay will help support Government instead of creating more Federal debt.

As long as this area is efficiently served by a private electric company which is willing to furnish power needed, I am opposed to Federal construction of Hells Canyon Dam, and believe it to the best interest of Idaho that the Federal Power Commission be allowed to render a decision as prescribed by law.

As a resident of Idaho for many years and operating farm and ranch property I feel certain it is unwise to increase public debt, already high, whenever development can be made by private capital.

STATEMENT OF THE BOARD OF DIRECTORS OF THE LOYD CANAL CO., OF BLACKFOOT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, AT BOISE, IDAHO, APRIL 4, 1955

We, the board of directors of the Loyd Canal Co., Blackfoot, Bingham County, Idaho, go on record this date as being opposed to the construction of a Federal Hells Canyon Dam on the Snake River.

WAINE V. KINNEY, *Secretary.*
FRED POINDEXTER.
CLARK TURNER.

STATEMENT OF LUCERNE GRANGE, NO. 189, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, IDAHO, APRIL 4, 1955

Be it known that Lucerne Grange, No. 189, goes on record that they are definitely opposed to United States Government building Hells Canyon Dam.

EVERT H. WOLFE, *Master.*

CLIFFORD S. MAIN, NYSSA, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, IDAHO, ON APRIL 4, 1955

It seems incredible to me to believe that there have been those bills introduced in Congress to direct the Federal Government to build a high dam at Hells Canyon at this time. Surely our Congress has respect for the Federal Power Commission who have held hearings over this area and have made a thorough study of this matter of whether it is most feasible for the Government to build a dam or to let private industry develop this site, and are in the process of rendering a decision on this matter. We believe there should be no action from committees on such a bill until this agency has rendered its decision, and we believe this agency should be pressed for its decision soon. It is obvious that this action by Hells Canyon sponsors is a political maneuver to forestall any decisions on this matter indefinitely.

In all fairness to the Federal Power Commission and to private industry we must wait for this decision from the Federal Power Commission which agency has been established by law to handle such matters and whose decisions are based on sound engineering and technical facts.

These present hearings, the balance of them scheduled for Pasco, Lewiston, and Portland are far from the areas most affected by such a dam and do not give the upper Snake River Valley fair consideration. Therefore, it is our sincere opinion that the Federal Power Commission is capable of giving a fair and unbiased opinion on this matter and that we should consider their decision as to which is the most feasible way to develop this site and to the best interest of the people and the area affected.

STATEMENT OF SHIRLEY H. MANSER, MANSER INC., PAYETTE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am definitely against the Hells Canyon high dam construction for the following reasons:

I do not believe the Government should use the Nation's tax money to compete against private industries.

There are too many other needs whereby the Government money can be used for the Nation's needs where private moneys are not available.

It is my understanding that if the Idaho Power Co. builds the 3 low dams there will be approximately $10 million annual tax revenue returns for Federal, State, and local taxing units. On Government construction there will be no returns. Therefore, I heartily recommend the construction of the three low-head dams by the Idaho Power Co.

STATEMENT OF H. B. MARKHAM, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

The Hells Canyon high dam, subject of the hearing being held this 4th day of April 1955 before your committee, merits consideration of the following points:

The construction of the proposed high dam by the Federal Government will create nothing that cannot and would not be provided by private enterprise and private capital.

The citizens of Idaho and the balance of the Nation would be asked to pay for an extremely expensive construction project from the tax coffers of our Government.

Equal facilities can be provided by private capital creating a taxable unit that would become a source of revenue and income to the Government and not an expense as is being proposed by some.

Another most important factor is that badly needed electrical energy would be developed and delivered to the consumer at a much earlier date than by the Federal Government.

With the apparent development of atomic energy as a power source the high dam at Hells Canyon might well be obsolete before completion.

It is my belief the above points have sufficient weight to merit your serious consideration. I urge that you do not recommend the construction of the Hells Canyon high dam.

STATEMENT OF T. L. MASINGILL, ELECTRICAL CONTRACTOR AND APPLIANCE DEALER, PAYETTE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

My name is T. L. Masingill. I am an electrical contractor and appliance dealer, owner of the Gem Electric Co. of Payette. My business depends on the availability of plenty of electricity, and I am tired of the political delays holding up further development on the Snake River. This issue concerning construction of hydroelectric plants in Hells Canyon has been pending for more than 7 years. Now, when it appears a decision will be forthcoming from the Federal Power Commission, political planners favoring Government ownership of electric generating facilities, step in once again to agitate for a tax-financed dam at Hells Canyon. The purpose seems obvious: To throw more and more roadblocks in the path of private enterprise.

In these planned delays, the proponents of Government power give little consideration to the power consumers of the Snake River Valley. We need the dams and powerplants planned by Idaho Power for the Hells Canyon stretch of the river. Electric use here is nearly 4 times what it was in 1946 and there is every indication that electric use within 10 years will be 3 times what it is today. The interests of the people of this area and their need for power now must be considered ahead of Federal power philosophies, and the desire of a highly vocal minority group to advance the cause of socialism.

Let's bear in mind, proposals for a Government-financed dam in Hells Canyon have already been turned down by Congress. A comparison of the 2 plans—that of a grandiose Federal dam and that of the Idaho Power Co. for 3 dams—have been studied over a long period by the Federal Power Commission. I urge that we accept the decision of the Federal Power Commission when it is given and proceed as soon as possible with the construction of additional hydroelectric power. We need more power here; we need it now, and private enterprise can provide it sooner without expense to taxpayers.

STATEMENT OF H. H. MATTHEWS, OF MERIDIAN, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am in opposition to the Federal Government building a high dam at the Hells Canyon site.

STATEMENT OF MRS. WILLIAM MCCARTHY, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

As a property owner and native of Idaho, I would like to voice my opinion of the Hells Canyon Dam in Idaho.

After reading arguments on it both pro and con, it seems to me that those who are fighting for the high dam are doing so as a means of gaining personal recognition politically, or merely for the sake of winning a battle.

Personally, the power already enjoyed by cooperatives, unions, and federally controlled projects frightens me. Although we are far from the upper-income bracket, I do not feel that big business and private enterprise are out to reduce us to slavery. On the contrary, I firmly believe that developments by private concerns will keep democracy alive in our State and throughout the United States.

STATEMENT OF THE GLENNS FERRY AREA CHAMBER OF COMMERCE, GLENNS FERRY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Whereas the Hells Canyon issue is in the hands of the Federal Power Commission, the agency established by law to handle such decisions, and, that decision will be made only on fact; and

Whereas the directors of the Glenns Ferry Area Chamber of Commerce would like to register their opinion on this matter; and

Whereas this area is now capably and efficiently served electricity by a private utility company: Now, therefore be it

Resolved, That the Federal Power Commission be allowed to make their decision in the manner prescribed by law.

M. L. MCNUTT, *President.*
JOHN L. GARMENDIA, *Secretary.*

STATEMENT OF VARD W. MEADOWS, REPRESENTING THE FALLS IRRIGATION DISTRICT OF AMERICAN FALLS, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

We desire to present this statement and go on record as opposing the construction of a high dam at Hells Canyon on the Snake River between the Idaho and Oregon State borders, for the following reasons:

The waters of the Snake River originate in Idaho and western Wyoming and we contend that they belong to the people of western Wyoming and the State of Idaho for their beneficial use and the prime use thereof is irrigation and our arid lands and domestic uses. The irrigation rights of the people of Idaho are protected by the State of Idaho and not solely by the United States of America. Our entire economy of the Snake River Valley is dependent on a good water right and without that right protected and guaranteed this entire basin would become a desert from which it is now being reclaimed.

There are approximately 1 million more acres of arid land that can be reclaimed in southern Idaho with the use of water from the Snake River, and it must be stored in dams and reservoirs upstream near the headwaters as possible, so it can be released downstream at the proper time and season when it will do the most good. A huge Federal power dam on the lower Snake River would entirely destroy the future development of Idaho's 1 million additional agricultural acreage. In short water years there would not be enough water to irrigate the agricultural lands of Idaho and still supply enough water for firm power at Hells Canyon Dam. We suggest that power dams be constructed farther downstream so as to control the waters of the Salmon and Clearwater Rivers where there is no irrigated land dependent on the waters of these two rivers, and this would give the needed flood control that is requested on the lower Columbia River. The Snake River is now and will be further, the best controlled river in America with the completion of Palisades Dam now under construction on the upper Snake River watershed. The waters of this river will then be completely controlled above the mouth of the Salmon River where it empties into the Snake River.

We believe in private enterprise that has made America the great Nation that it is today and therefore recommend that private capital be used and they are willing to invest money at this time, in the production of power on the Snake River without taking water and irrigation rights from the people of Idaho. Private enterprise pays taxes into our tax structure while Federal dams are subsidized by tax money and pay nothing into the local, State, and National economy. Private enterprise helps educate our children, build our roads, hospitals, towns, and cities and pays the cost of government at all levels of our economy. We believe that those who advocate a Federal dam at Hells Canyon for power purposes should be honest and state that there is no such thing as cheap public power. Public powerplants pay no taxes and all losses are subsidized by the Public Treasury which is fed by taxes from the people of the Nation and private enterprise. Private enterprise can build powerplants that will produce the same amount of power at the Hells Canyon Dam that the Government plant will produce at one-third the construction cost with private capital, and not use public tax money to the amount of half a billion dollars.

Some advocates of a high Government dam at Hells Canyon suggest that the people of the affected area of the Columbia Basin could vote on the proper use of the water of the Snake River but we cannot agree to this because the population is on the Pacific Coast States of Oregon and Washington and we would be outvoted at every election, and besides those people have everything to gain and we have everything to lose including our water rights and our irrigated land and economy of southern Idaho. The people of Oregon and Washington and northern Idaho want power and flood control; therefore, let them go downstream to gain these benefits and leave the waters of Snake River above the mouth of the Salmon River to the people of the irrigated lands of southern Idaho and eastern Oregon, that our economy, our homes, our businesses, our farms, and our people be unmolested.

VARD W. MEADOWS,
Secretary-Treasurer.
VERN EAMES,
President of Board of Directors.

STATEMENT OF DON M. STOREY, REPRESENTING THE MERIDIAN CHAMBER OF COMMERCE, OF MERIDIAN, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, AT BOISE, APRIL 4, 1955

My name is Don M. Storey of Meridian, Idaho. I represent the Meridian Chamber of Commerce who wish to protest the construction of the Federal high dam at Hells Canyon. Meridian is a second-class city located in the heart of a fertile farming and dairying area. The continued growth of our town depends directly upon the prosperity of the farmers. One of our larger sources of income is through the creamery which is one of the largest milk receiving stations in the United States. As a representative of a town whose economy is so closely associated with agriculture and whose very existence is dependent upon farm prosperity, is it any wonder that any threat to irrigation water rights fills us with alarm? We have been told that proponents of this legislation have attempted to write into this bill some sort of a safeguard to the farmers of the Snake River Valley regarding water rights. To us in Meridian this carries the strong implication that if this Congress can nullify Federal authority, future Congresses can reestablish it. This, we feel, constitutes a serious threat to our future prosperity.

The investment of taxpayers' dollars in the proposed Federal high dam at Hells Canyon, when the Idaho Power Co. is willing to develop this section of the river with private capital, seems to us to be a wasteful expenditure of public funds at a time when Federal taxes are already out of hand. If this area is developed by private funds, it will add to the tax rolls of the area instead of draining off tax dollars. We feel that more serious consideration should be given to conservation of the tax revenue and the balancing of the national budget.

We believe in freedom of enterprise and the development of private initiative. We believe that continued interference by the Government in private business will eventually lead to a complete disintegration of our American way of life and a socialization of all business, with the result of lowering our high standard of living.

Private enterprise is capable of building a project of this nature more economically than the Government. In general, Government projects are not efficiently operated because the control is often centered some distance from the affected area and, for that reason, is not necessarily responsive to local conditions.

In conclusion, I wish to summarize our opposition to the Federal Hells Canyon Dam in the following points:

1. We feel that it will jeopardize the water rights of the farms of the Snake River Valley.

2. We object to the investment of tax dollars in a project that can be done by private taxpaying capital.

3. We believe in freedom of enterprise as the American way and want local industry to develop and prosper for the benefit of local people.

4. We feel that private enterprise can build this project more economically than the Federal Government; therefore, it would be an economic waste to let the Government build it.

STATEMENT OF O. K. MESERVY, SECRETARY-MANAGER, FARMERS FRIEND CANAL & IRRIGATION CO., ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Opposition to the proposed construction of a federally financed dam at Hells Canyon on Snake River has been expressed many times but the Farmers Friend Canal & Irrigation Co., St. Anthony, irrigating approximately 3,000 acres in Fremont County wishes to again voice a protest against such proposed legislation as is included in S. 1333 and similar legislation.

Although there are many reasons for this opposition we are willing to rest our protest at this time on the fact that the best legal authority available to us has convinced us that we will put a serious cloud upon our water rights if we ever permit the passage of such legislation by Congress because that body cannot protect itself against the rights of the National Government to interfere with the States rights and no single session of Congress can guarantee what its successors will do.

STATEMENT OF A. G. MILLER, D. D. S., ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

This letter is to urge your careful consideration of the water rights of the people of Idaho and our own development and future prosperity of our State, instead of giving it to the advantage of some neighboring States at our future disadvantage.

Water today is our dearest possession and we in Idaho want to protect our future.

STATEMENT OF C. E. MILLER, ROBINETTE, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am vitally interested in the orderly development of the electrical-power potential of the upper Snake River Canyon on a sound, economical basis.

Assuming that the need for electrical energy is great, as currently stated, for the continued growth of the Northwest and intermountain areas, I favor carrying out the program of awaiting the decision of the Federal Power Commission based on the extended hearings lately completed for the following reasons:

1. The development of the upper portion of the Snake River Canyon under the utilities plan would develop the full economics of this section of the river.
2. The three-dam program has been proven feasible and at a favorable cost ratio.
3. The development of the river by a taxpaying utility would be an assistance to our National and State economics instead of an added burden at all levels for years to come.
4. The Idaho Power Co. and their associates have proven ability to efficiently finance and construct the installations and place or bring them into production years ahead of the more costly Federal dam at the Hells Canyon site.

Further, I am opposed to the introduction of any legislation in the Congress of the United States relative to the Hells Canyon Dam until a decision on the issue has been handed down by the Federal Power Commission.

I have lived in the Snake River Canyon area under consideration and operated a business furnishing supplies and services to the general public for the past 37 years.

STATEMENT OF MINIDOKA IRRIGATION DISTRICT, RUPERT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Whereas "field hearings" by the appropriate congressional subcommittee are to be conducted eminently in the State of Idaho and other States of the Pacific Northwest upon the question of authorization of construction of a single high dam in the Hells Canyon of the Snake River by the United States of America; and

The Minidoka Irrigation District, a quasi-municipal corporation of the State of Idaho with principal place of business at Rupert, Idaho, is vitally interested in the question by reason of its use of the waters of Snake River for the irrigation of lands within the boundaries of said district comprising some 71,000 acres; and

It appearing to said district and the water users thereof that long-established water rights probably would be jeopardized by the assertion of superior rights to the waters of said Snake River upstream from a dam constructed by the United States in Hells Canyon; and

It appears that private enterprise is ready, able, and willing to develop that portion of the Snake River which would be directly affected by the proposed Government dam at a fraction of the estimated cost of the same to the taxpayers of the United States if the United States were to construct the same; and that the development of the same by private enterprise would provide the United States with estimated income-tax revenue in excess of $5 million for 1 year and $254 million for a 50-year period, based upon current income-tax rates, and would provide the State of Idaho, under present income-tax rates, with income-tax revenue in excess of $378,000 for 1 year and $18 million for a 50-year period, and would provide the States of Idaho and Oregon with property taxes in excess of $2,500,000 for 1 year and $140 million for a 50-year period, based upon the average 1952 ratio of ad valorem taxes to investment for each of the 2 States; and conversely, if private enterprise were prevented from so developing Snake River, the people of said States directly affected would be deprived of these tax benefits while the taxpayers of all the States would be burdened with taxation without receiving the benefits therefor; and

It appears there is no necessity for the United States to enter into the power business through the construction of a high dam at the site above mentioned from any standpoint, particularly when private enterprise is ready, able, and willing to obtain the same results with taxpaying private capital and under the local control of those who would be directly benefited by the same or unreasonably burdened by governmental development; and

It appears that the question is pending before the Federal Power Commission after hearings resulting in a record in excess of 4 million words and 400 exhibits wherein the question was exhaustedly debated as to its technical and nontechnical aspects, and which record is available to all concerned: Now, therefore, be it

Resolved by the Minidoka Irrigation District, Rupert, Idaho, That the construction of a single high dam in the Hells Canyon of the Snake River by the United States of America not be authorized by the Congress, and that the development of said site thereby be left to private enterprise for development in accordance with the best interests of those who are directly affected by the same.

Done this 31st day of March 1955 at Rupert, Idaho.

MINIDOKA IRRIGATION DISTRICT.
By E. J. RUSH, *Chairman.*

Attest:
[SEAL] G. E. NICKERSON, *Secretary.*

STATE OF IDAHO,
County of Minidoka, ss:

I, G. E. Nickerson, secretary of the Minidoka Irrigation District, do hereby certify that the foregoing is a full, true, and correct copy of the original resolution now on file and of record in my office in the city of Rupert, Minidoka County, Idaho.

In witness whereof I have hereunto set my hand this 31st day of March 1955.

(Signed) G. E. NICKERSON, *Secretary.*

STATEMENT OF MOUNTAIN HOME RECLAMATION COMMITTEE OF MOUNTAIN HOME, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

The Mountain Home Reclamation Committee is composed of farmers, irrigators, landowners, and businessmen living in Mountain Home and the surrounding area. Its sole objective is to bring about the creation of additional reclamation on the desert adjacent to Mountain Home. The committee is nonpolitical in nature and is willing and anxious to work with other groups and organizations and with Members of Congress to the eventual end that our reclamation goal will be acccomplished.

We people in the Mountain Home area have worked for years to bring about reclamation on our desert. We have appeared before congressional committees on numerous occasions. There have been numerous proposals developed for such reclamation development, and likewise several bills introduced in Congress seeking authorization of these proposals. We have spent a good deal of our own money in our desire, as constructive citizens, to further each of these Mountain Home proposals, all to no avail. Congress has not seen fit to authorize any proposal placed before it, and we have always come up squarely against the problem of economic feasibility. Until now each proposal that has been submitted to Congress has required an excessive cost of development per acre and consequently an inordinately high Federal subsidy.

For example, the so-called original Mountain Home project outlined in House Document 473 and mentioned as a part of several previous Hells Canyon bills has repeatedly failed of congressional interest and approval. This project requires an investment, based on 1948 cost estimates, of $253 million, or an investment in excess of $1,000 per acre. Based on 1955 cost levels this project would prove considerably more expensive, with the cost-per-acre basis probably about $1,400.

Based on 1948 cost estimates the stumbling block of the original Mountain Home project was not only its excessive cost per acre but also the fact that after deduction of a reasonable amount for repayment by the irrigators and after deduction of the amount available for repayment from power revenues there still remained nearly $100 million required as a Federal subsidy in order to develop this project. No legitimate source for the subsidy has been developed.

The theory that power revenues from a Federal Hells Canyon project could be diverted to pay this subsidy is without substance because the Bureau of Reclamation payoff schedules for Hells Canyon show that the entire proceeds of the first 53 years' operation of that project are required to pay its own original cost. For that period of time there would be no revenues available to subsidize the Mountain Home project or, for that matter, any other project.

If development of the Mountain Home desert is to depend upon the construction and operation of the Federal Hells Canyon project we must reconcile ourselves to the inescapable fact that Mountain Home desert development will not occur in our lifetime and probably not in the lifetime of our children. The ultimate investment in Hells Canyon will require more than $1 billion before its claimed at-site and downstream benefits could be achieved. Moreover, if $250 million in additional funds for the original Mountain Home project were to become available the planned construction schedules require at least 30 years before water is available.

Therefore, from a practical viewpoint, if the original Mountain Home project is to be constructed dependent upon the Hells Canyon project we must await the expenditure by Congress of over $1,250 million of Federal funds and a congressional willingness to subsidize the reclamation project costing $1,400 per acre. Based on long years of experience we are not naive enough to believe that Congress will reverse itself and make these appropriations in the foreseeable future.

In 1952 a proposal was finally advanced for reclamation of the Mountain Home desert without the requirement of excessive Federal investment or subsidy. This proposal, commonly referred to as the Sloan plan, has had the undivided attention of our committee since that time. The proposal is at present being investigated by the Bureau of Reclamation and a favorable feasibility is hoped for at an early date.

The Sloan plan contemplates the irrigation of a total of 108,800 acres in the so-called Long Tom and Hillcrest units of the Mountain Home division. The Long Tom unit is an area contiguous to Mountain Home and comprises 103,800

acres. The water supply for this unit will be diverted from the south fork of the Boise River about 5 miles below Anderson Ranch Dam and diverted through a tunnel and powerplant to the irrigation distribution system. The Hillcrest unit of 5,000 acres, near Boise, will be served by pumping of water from the Boise River.

The water for the entire project can be made available from unused water resources of the Boise River, ground water pumped from the irrigated Boise Valley and supplemental water lifted from the Snake River as required. Ground water pumped in the irrigated Boise Valley will provide a large and essential drainage benefit because over a period of years the application of water to the irrigated lands in excess of that required has gradually increased the ground-water level to the point where the productivity of the land in many areas is dropping sharply. Pumping this surplus ground water and reusing it for irrigation will release present supplies for the irrigation of new land. Thus, by this substitution of drainage water for Boise River water, additional land can be irrigated. The new land can assist in the cost of drainage of the Boise Valley.

The total cost of this irrigation project for all facilities in connection with the drainage in Boise Valley, irrigation of the Mountain Home project, and the associated powerplants, including an allocation of the cost of Lucky Peak Reservoir, is estimated to be about $75 million. Annual water charges to the irrigators and revenue from the sale of power over and above that required for interest and repayment of the cost allocated to commercial power will pay out the project in less than 55 years. This is the most sound and self-supporting reclamation project proposed anywhere in recent years.

We have completed necessary preliminary steps toward formation of an irrigation district and possess written approval from more than the necessary majority of farmers to form that district. Assuming a favorable feasibility report is made we urge project construction at the earliest possible date to allow this generation to have immediate benefit from the development of the desert. Project construction will likewise provide immediate and continuing tax revenues and benefits to the Nation.

A most important feature of the Sloan plan is the fact it does not require any diversion of waters from the Payette River watershed. We do not seek the diversion of water properly belonging to and required by those living adjacent to the Payette River. Consequently, our plan does not develop any opposition from Payette River watershed residents, an obstacle which in itself may be insurmountable to those advocating the original Mountain Home project.

There is nothing within S. 1333 and the other Hells Canyon bills which in any way assures present or future development of the original Mountain Home project. There is nothing to guarantee that more development will occur in the next 50 years than has occurred in the past 50 years. We believe the Hells Canyon legislation must be recognized for what it is, legislation seeking public power development, and that it contains no benefits, assurances, or aids for reclamation.

We urge favorable consideration of the Sloan plan, free from any Hells Canyon connection. The Sloan plan provides the following advantages:

An economic reclamation program, self-supporting;

An economic solution to the Boise Valley drainage problem;

Use of Boise River drainage water instead of transfer of Payette River water to the Boise Valley;

A construction time of less than 10 years as compared to about 30 years on the original plan;

The entire cost would be repaid in about 50 to 55 years; and

There would be no duplication of facilities that would prevent additional development of the remaining suitable land when more water can be made available from other sources.

We urge the rejection of the Federal Hells Canyon project.

J. B. FIFER, *Chairman.*

STATEMENT OF MOUNTAIN ROCK GRANGE, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

We, the members of the Mountain Rock Grange have discussed the desirability of Hells Canyon Dam at length a number of times, and have gone on record as opposing this high dam each time, for these reasons:

1. We believe in free enterprise. The members of our grange have established their homes on this principle. We hope to continue under it, and we are opposed to Government control.

2. The Federal Government makes us no guaranty to protect our water rights.

3. Should Hells Canyon Dam be built there would be a great loss of revenue to the State of Idaho.

4. The cost of a high dam as proposed by the Federal Government would be greatly in excess of the cost of the dams planned by private enterprise. The cost of this high dam would be borne by the taxpayers. The expenditure of Government capital, where private capital is available is contrary to the Government's expressed intention of lowering taxes and balancing the budget.

For these reasons we vigorously oppose Hells Canyon Dam.

WILLIAM W. NOBLE,
Master, Mountain Rock Grange, No. 370.

STATEMENT OF MRS. FRANK MORGAN, NYSSA, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Under a system of private enterprise and individual initiative, our country has grown great and prosperous. Therefore, I feel that when a reputable company is willing and anxious to build the proposed dams, the Government's role should be largely one of supervision.

STATEMENT OF STATE SENATOR LEO D. MURDOCK, BINGHAM COUNTY, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

As a member of the Idaho Legislature from Bingham County, I represent an area which is the third largest potato-producing county in the United States and comprised of 258,000 irrigated acres of which 46,000 acres are under electric-motor-driven pumps, lifting water from a vast underground reservoir. According to surveys, an additional 100,000 acres will come into production in the near future. In southern Idaho, irrigation water is our lifeblood.

To the people of Idaho and Bingham County the issue of the Hells Canyon development are much greater than the question of whether taxpaying private enterprise or a nontaxpaying Federal agency shall develop the hydroelectric power potential of that section of Snake River. Really at stake is the determination of whether Idaho's greatest natural resources, water and hydroelectric power, shall remain under control and regulation of the people of Idaho or shall be taken from them and control placed in the hands of a Federal agency.

The Snake River Valley has never had a power shortage. Agriculture, business, and industry have experienced an orderly growth with the advantages of plentiful supplies of low-cost power furnished by our own privately owned Idaho Power Co. A continuation of this economic development in Idaho depends upon Idaho's safeguarding its own power sites for its own use.

67129—56——31

The Idaho Power Co. has had an application before the Federal Power Commission for several years for a license to develop the Hells Canyon stretch of the Snake River and last year this body explored and completely exhausted all the technical phases of the issue, and this body is expected to render their decision shortly.

For this reason I deem these hearings an unnecessary expense and time-consuming process. I urge our congressional delegation to discourage any action by Congress on the recently introduced bills authorizing Federal development of the Hells Canyon stretch of Snake River.

STATEMENT OF JACK M. MURPHY AND FRED A. SCHWARTZ, SHOSHONE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

1. It is our understanding that a proper function of government does not include engaging in any field involving a proprietary capacity except and only when private enterprise does not and will not enter that field.

2. There is no legal language strong enough to properly protect upstream users of the waters of the Snake River. What is to prevent, once a Federal dam is in place and jurisdiction assumed by the Federal Government, of an amendment or a repeal by the following Congress? Who can assure our water users in the State of Idaho that this will or will not be done?

3. It is our understanding, and apparently the testimony received at the Hells Canyon hearing would indicate, that our private-utility company has a proposal equal, if not better than, the Federal proposal.

4. Idaho presently is a have-not State with large amounts of arid and wasteland within its borders. One thing we do have, to some extent, is waterpower. From these limited natural resources we must obtain the necessary money for running our State. Why should the people of Idaho approve of a tax-free project of the Federal Government when we have an organization governed and regulated by our own State utilities commission who we can adjust and tax in accordance with the dictates of our legal legislature? In other words, why must we give away resources to the Federal Government when this State, in view of its financial condition, needs every tax dollar it can get?

5. Last, but not least, the vast expenditure of money by the Federal Government who is already operating on a deficit balance, which relates back to item 1. The job will be done as well, if not better, by a private organization without cost to the Federal Government. Rather than spend tax money, we should do the same job and receive tax money.

STATEMENT OF MURTAUGH GRANGE NO. 256 PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Murtaugh Grange No. 256 goes on record opposing a Federal high dam in Hells Canyon.

EARL A. YOUNG, *Master.*
HAROLD MENSER, *Secretary.*

STATEMENT OF RALPH R. NEWBERRY, JEROME, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I oppose the Hells Canyon high dam as I do not believe it to be for the best interests of the people of Idaho or the Northwest as a whole and constitutes a threat to the very lifeblood of the people of the upper Snake River watershed.

STATEMENT OF J. H. SILBAUGH, PRESIDENT OF THE BOARD OF DIRECTORS, NORTH SIDE CANAL CO.

My name is J. H. Silbaugh. I am president of the board of directors of the North Side Canal Co. I am also a member of the Committee of Nine. This committee has been called the board of directors for Water District No. 36 for distribution of the waters of the Snake River for use in the Snake River Valley. I settled on the North Side tract in 1910 and farmed my own farm there until my retirement a few years ago. I am making this statement on behalf of the company and the board of directors.

The stockholders of the North Side Canal Co. by unanimous vote at its annual meeting on January 15, 1955, adopted a resolution in opposition to the proposed Federal Hells Canyon project. Similar action had been taken at prior annual meetings of the stockholders and represents the overwhelming sentiment of the water users. Moreover, irrigation districts and canal companies representing the overwhelming majority of the irrigated acres in southern Idaho, comprising approximately 2½ million acres, have passed similar resolutions in opposition to a Federal Hells Canyon project.

The North Side Canal Co. represents an area of approximately 160,000 irrigated acres in Jerome, Gooding, and Elmore Counties lying north of Snake River. This project, constituting one of the largest private irrigation systems in the country, is a Carey Act project which was initiated in 1903. It is now in an advance stage of development. The land is extremely fertile and highly productive. All irrigated crops do exceptionally well. We have fine roads, schools, homes, and a number of progressive communities, the largest being the town of Jerome.

We now have an adequate water supply but only after many years of hardship and struggle. We are opposed to any project which will place our water rights in jeopardy. We had an early filing for natural flow from the Snake River, to be diverted at Milner, when the project was initiated, which proved to be wholly inadequate. Later we acquired from the United States storage capacity in Jackson Lake Reservoir and after American Falls Reservoir was constructed in 1926 we purchased additional storage space in American Falls Reservoir. In 1952 we purchased storage space in Palisades Reservoir and additional space in American Falls Reservoir.

Our major opposition to the proposed Federal Hells Canyon project is that we believe it would constitute a threat to our existing water rights, as well as a threat to future water rights that will be required to irrigate many thousands of acres yet undeveloped. The future development of this area depends upon the full use of the waters of Snake River and its tributaries. We are definitely and unalterably opposed to any limitation on the future irrigation development in Idaho, and we feel that the Federal Hells Canyon Dam, if constructed, would be a definite threat, not only to future development but also to our existing water rights. We are very much concerned regarding our existing rights because of the position the Federal Government has taken that private appropriators can acquire no water rights in navigable streams, and we do not believe that any restrictive language can be placed in the bill which would protect us in the future.

Furthermore, I believe that future storage on the Snake River should be where the floods occur. I testified on this matter at the hearing in Idaho Falls on February 18 before the Army Corps of Engineers. The upper Snake River Basin still faces a real flood-control problem which can only be solved by constructing reservoirs above the areas subject to flood damages, and not on the Snake River below the areas in Idaho that are subject to flooding. Throughout the upper Snake River area on the main stream as well as some of the tributaries, there is a real flood-control problem. It is now generally recognized that additional storage on the Snake River should be provided by reservoirs on the upper tributaries of the Snake River. Construction of such reservoirs would also serve the very valuable purpose of providing additional supplies of water to large areas of land which are now inadequately irrigated, particularly in dry years.

We are further opposed to the construction of a Federal Hells Canyon Dam because we believe that where private capital is ready, willing, and able to develop power sites on the Snake River they should be allowed to do so. More

than 90 percent of the irrigation development in the Snake River Valley has been initiated by private enterprise. We fully endorse the partnership policy of water resource development. It has worked in Idaho in the past, and we see no reason why it won't work in the future.

I emphasize again, however, that our major concern is the protection of our existing water rights which we believe are placed in jeopardy by the proposed project.

STATEMENT OF ED OAKES, OF ONTARIO, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Having lived in the Snake River Valley for some 42 years, and being a landowner with a considerable amount of property in range and irrigated land, I feel that this bill, as presented, is very inadequate for the protection of the farmers and irrigators of the Snake River Valley.

The first paragraph of the bill as presented gives Congress or others "duly authorized by Congress in the exercise of its constitutional authority to provide for the general welfare, to regulate commerce among the States, and to make all needful rules and regulations respecting property belonging to the United States, and for the purposes, among others, of controlling and utilizing the Snake River and its tributaries for beneficial objects, including generation of hydroelectric power and energy for the national defense." I feel that this section 2 infers the protection to the farmers and water users, but does not give this protection. My idea is that this gives them the right, if there is insufficient downstream flow, to require release of waters from above and thus curtail beneficial use of the water under applicable State and other laws in those upper areas.

In a speech before Congress, Mr. Morse, Senator from Oregon, stated that in his opinion the power from Hells Canyon could be utilized for the manufacture of fertilizer and would lower the price of fertilizer from $14 to $12 a ton to the farmers. The electric furnace process of manufacturing fertilizer is a double-process method having many drawbacks, and if the power was furnished free to the manufacturer it would still be more expensive than the acid flotation method.

I also feel that this Hells Canyon project is being used for a political football to the detriment of all the people in the United States, especially the ones in the Northwest. The sponsors of this bill are asking for power for defense purposes and especially stressing the point of defense, but at the same time they have delayed the construction of the projects for some 6 or 7 years. I feel that before anything is done or any decisions made, adequate opportunity should be given to the people in the territory affected to express their opinions. I feel that a hearing is needed for a project of this kind.

This country was founded on a basis of free enterprise, but over a period of many years business enterprise and the people have been regimented through permits, licenses and other obstacles too numerous to mention, until business is gradually being taken over by the Government. We appropriate billions of dollars to fight this type of Government and at the same time we are gradually forcing it upon our own people.

STATEMENT OF WILLIAM OLIVER, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am a registered Democrat and a property owner in the Pine Valley area which is located some 35 miles from the proposed Hells Canyon site. I am also a past Grange master, president of the Farm Bureau, have served on both elementary and high school boards, at present am serving as supervisor in the soil conservation district and am president of the 4–H Leaders Association.

I have studied the arguments and past legislation of the sponsors of the high dam at Hells Canyon with much interest and concern. I have also examined the newly proposed Hells Canyon bill. I have examined the Idaho Power Co.'s plans, and have studied their testimony, for three dams in the same area.

I am submitting the following reasons why I am opposed to any legislative proposal to construct a high dam at Hells Canyon by the Federal Government.

1. Idaho Power Co., a public utility, interested only in the production of electrical power, is better qualified to determine the economic potential of Snake River than any group of engineers working under political appointment.

2. The Idaho Power Co. program will provide immediate and substantial contribution to Pacific Northwest power requirements.

3. Idaho Power Co. is ready and willing to commence immediate construction on their three-dam plan.

4. Idaho Power Co.'s proposed three dams will substantially increase their tax payments.

5. The construction of a Federal high dam at Hells Canyon can only increase the already very high public tax burden.

6. Any legislation at this time will delay development of much needed electrical power in the Northwest. As of this date the interruptible power supply of the Northwest has been cut 75 percent due to winter peak demands and low stream flow.

7. The Federal Power Commission should be allowed ample time to render a decision on the pending Idaho Power Co. applications before any new legislation is submitted to Congress.

8. That the money needed to construct a Federal high dam would be more wisely spent in national defense, and our governmental brain-power more wisely used in the interest of national defense, our foreign policy, and the eradication or protection of squirrels on the White House lawn.

STATEMENT BY S. C. PERRY, OF MERIDIAN, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I own and operate on a share basis an 80-acre farm and I am also manager of one of the larger milk-processing plants in Idaho.

From experience, all farmers know that all successful diversified farming is dependent upon irrigation water. If the irrigation water is taken away from the farms in southern Idaho, there will again be a desolate desert.

The resources of the Snake River Valley must be developed in such a manner that the irrigation water rights are not impaired.

For flood control upstream dams should be developed.

For power development this should be a project for private enterprises. Private enterprises pay taxes, furnish their own capital, and operate and build more economically than does the Government.

It is my belief for sound economy that the Government should not build the Hells Canyon Dam.

STATEMENT OF PLEASANT PLAINS GRANGE NO. 168, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Pleasant Plains Grange No. 168 has consistently been on record opposing a Federal high Hells Canyon Dam.

Lack of water for storage is the main reason.

As taxpayers we see an ever-increasing cost of expenses and decreasing income. It is an unnecessary item on tax rolls which would prove to be a concrete monument of bungling.

We would advise the Congressmen to take note of the high-water marks on the tributaries of the Snake; mainly the Salmon, Clearwater, and the Kootenai Rivers.

BURTON HARMON, *Master.*

STATEMENT OF POCATELLO CHAMBER OF COMMERCE, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The Pocatello Chamber of Commerce renews its previous objections to Federal construction of a high dam in Hells Canyon under the role of flood control and regulation of flow for downstream power production, as previously filed in 1951 and 1954 in hearings similar to this, and your attention is called to these previous objections.

Briefly, these covered the points that Government power is in direct competition to private industry; the costs of the construction are veiled and confused

with interjections of evaluations set for various types of nebulous benefits of doubtful actual value, and the eventual production of power, if ever, will be subsidized by numerous escape clauses covering the local areas of government which our citizens are forced to provide from their own resources, first having paid heavily for Federal levies upon us.

Under the best possible draft of any authorizing legislation, the peril of future encumbrances and entanglements to our present and future developments based on the use of water for irrigation remain a field of chance, for no Congress may obligate another, none may invade the field of constitutional rights and guaranties, nor guarantee future interpretations of its own acts by the judicial department of Government.

The preexisting statement that this dam was an absolute for national defense has been toned down now to fit the present tenor of events, and we point out that similar pleas now regarding the immediate necessity for peacetime operations and developments will likewise prove to be merely an argument pro tem for the further advance of socialization of industry under any possible argument. Our area has been adequately served by private industry in keeping with our needs, and our greatest objection to the power phase is that we shall need more power in our area before any possible production under Federal construction schedules.

That such so-called sources of cheap power are necessary for development of economic units from our vast natural resources is best disputed in our own area by the visible and permanent industrial installations which have been made, serviced by private power, while the facilities for public power are still in only the argumentative stages.

If such power were to be produced, the benefit to Idaho, if such it proved to be, might easily be taken from us by the more populous areas on the Pacific coast under the theory of the greatest good for the greatest number, with little voice from us as to what constitutes the good.

With more than 60 percent of the land area of our State, truly a vast expense, under Federal ownership, we cannot endorse any plan to further reduce the tools of production at our hands required to meet the ever-continuing rising costs of Federal operations in our State, and in the Nation, and around the world. Meantime, we ourselves would have to provide local governmental services from the meager assets at hand without new additions for those purposes.

The history of the development of irrigation in southern Idaho has a 60-year record of continual effort to improve and make secure the water rights now held on the older irrigated lands, and since we are immediately adjacent to, and interested in, the Michaud Flats development, we have no desire to see those who will convert this from desert to production endangered or jeopardized or interfered with in their future consumptive use of water for any downstream purpose. With private power, the guaranty that they will not be interfered with will lie with our own people, by our own processes within the State. With Federal development, the control, direction, and interest will all lie far removed and remote from the protections which they must have, and which we could give them.

The action which we urge of the Congress is, first, not to build the high dam on the Snake River, and second, to take early steps to end the seemingly endless stream of argument impeding the efforts of those corporately organized among us, to do the job for ourselves at an early date.

ALVIN H. READING, *Secretary.*

STATEMENT OF P. S. PRIDE, MANAGER, WALTER T. KERN, AND DONALD D. DOUTHIT, OF THE BOISE-PAYETTE LUMBER CO., OF KUNA, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, AT BOISE, IDAHO, APRIL 4, 1955

We are opposed to the Government building a high dam at Hells Canyon.

STATEMENT OF REXBURG CHAMBER OF COMMERCE, REXBURG, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The officers and directors of the Rexburg Chamber of Commerce wish to reaffirm their opposition to the proposed building of Hells Canyon Dam. In opposing this project they are not taking the part of any private power company, nor are they taking this stand in opposition to public power. They are primarily interested in the protection of the water rights of the upper Snake River Valley. The continued use of the water for irrigation purposes is necessary to insure the present and future economy of our section of the State. Future expansion through the adding of additional farming areas and also industrial expansion cannot be expected in this area if downstream dams are constructed which may in the future cause the water of this area to be released for use at the downstream dam. It is for this reason that we oppose the proposed Hells Canyon project and we deplore the fact that the present hearings cannot be held in this area.

Our specific reasons for opposition are listed as follows:

1. Water for irrigation purposes is the lifeblood of the economy of eastern and southern Idaho. Every business establishment is dependent upon the prosperity of the farmers of south Idaho and they, in turn, must depend on storage water to irrigate their farms to produce the wealth that keeps the economic wheels turning. Anything that endangers their right to the waters of the great Snake River, places us in jeopardy. Without an ample supply of irrigation water assured for now and all future needs our present investments are in danger of being lost and future prospect of expansion will be definitely stopped. The industrial development of our area should not be curtailed.

2. Surveys now being made for the establishment of industrial manufacturing plants for this area which will use large amounts of water in their manufacturing processes. Building of these plants depends on an adequate supply of water for years to come. Anything that endangers the future supply of usable water will cause such plants to be built in other locations.

3. Southern Idaho and especially the upper Snake River Valley in eastern Idaho was settled and developed by pioneers who recognized the potential in the water resources available. Even before they had cleared their land, they set about building small storage dams and digging irrigation ditches to bring water to their crops. As more storage water became available, more land was put under cultivation. This great farming area grew and prospered only in proportion to the available supply of water. We cannot keep faith with these hardy pioneers, whose sacrifices were so great, unless we keep inviolate the water rights and resources they worked so hard and sacrificed so much to leave as our heritage. To endanger our water rights in any degree would be "selling our birthright for a mess of pottage."

4. We believe in the free-enterprise system. Our experience with private power companies has always been pleasant and beneficial to us as a community. We feel that in every development of power, private capital should be used if possible. In the development of power at Hells Canyon, the power needed can be developed by private capital and we feel this is the program to follow.

ROLLAND LOVGREN, *President.*

STATEMENT OF R. P. REYNOLDS, REYNOLDS MOTEL, ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

I am not in favor of the Hells Canyon Dam at this time. At this time we are in no position to use any of the power, and in case of a drought in this State the Government would bypass the reservoirs in this section in order to fill the Hells Canyon Dam. It is to Idaho's benefit to vote against it at this time, I believe.

STATEMENT OF M. D. RINER, LICENSED REAL ESTATE BROKER, CALDWELL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I have been a resident of southern Idaho since 1920 and have admired the interest and effort the Idaho Power Co. has diligently put forth in the struggle for the economic and rural development of this area. I have every faith in their future integrity.

Therefore, I feel any legislation for the Hells Canyon project would not be in the best interest of the people and the Federal Power Commission should have an opportunity to render a decision on the Idaho Power Co. three-dam development program.

RESOLUTION OF BOARD OF DIRECTORS OF RIVERTON DITCH CO., OF BINGHAM COUNTY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

At a special meeting of the board of directors of Riverton Ditch Co., of Bingham County, State of Idaho, the following resolution was passed by the Board:

Resolved, That the undersigned board of directors of Riverton Ditch Co., of Bingham County, Idaho, is unanimously opposed to any further legislation as pertains to the construction of a Federal high Hells Canyon Dam and urges the Idaho delegation in Congress to defeat such legislation; and be it further

Resolved, That since the Federal Power Commission has concluded its hearings as to the matter of development of the Hells Canyon area of the Snake River, this decision should be left to the Federal Power Commission for final action.

ALBERT BELL, *Secretary.*
O. S. ELISON.
ALBERT BELL.
MALIN ROBINSON.
A. R. SUMMERS.
WENDELL L. TOLMAN.

STATEMENT OF THOMAS B. ROWLAND, OF ROWLAND BROS. DAIRY, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

No controversial issue could more clearly define the thinking of the people of this country than the position they take on the question of Government versus private industry in serving the needs of private enterprise. In the question of Hells Canyon Dam, we either choose to make another definite move in the direction of a socialized government or we must stand on our convictions that for what we have today, we must thank our great system of free and private enterprise.

We cannot deceive ourselves into thinking that the Government is a Paul Bunyan who can build with magic and relieve us of burdens of cost. Private industry will do the building whether the contracts be let by Government or by private industry. We have only to compare by past experience the efficiency of Government operations in relation to the efficiency of private operations to know that there is but one choice in this respect.

It is not consistent that our Government should be making a supreme effort to get out of business on one hand while at the same time it is making an even greater effort to encroach on private business on the other hand.

When private industry has served its patrons as efficiently as the Idaho Power Co. has served the people of Idaho, and when this same company is willing and fighting for the opportunity to continue to serve these same people, it can be no less than an outright challenge of our freedom and to our way of life when our own Government attempts to disrupt this service and halt the progress of free enterprise by forcing a Government-owned Hells Canyon Dam upon its people.

THE SALT LAKE HARDWARE CO.,
Boise, Idaho, April 2, 1955.

SUBCOMMITTEE, SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS.

HONORABLE GENTLEMEN: We want to go on record as opposed to the building of Hells Canyon Dam, known as the high-head dam, by the Federal Government.

We feel that the information that has been put out to date and proposals made to construct this high-head dam will bring serious injury to the water rights of the people of the State of Idaho and future agricultural development and expansion in our State.

We, in Idaho, depend primarily upon agriculture for our main livelihood. It is very important that these birthrights of the people of the State of Idaho not be given away now or at any time in the future. As far as power requirements for the Northwest are concerned there are many other locations downstream on which these dams can be built.

We feel that the large majority of the financial support in behalf of the proposed Hells Canyon Dam has come from people and organizations and organized labor from without the State who do not have the interests of the Idaho citizens and their future at heart. Evidence covering this should be definitely established in the committee hearings. At no time has southern Idaho ever been short of power load. Sufficient expansion for the future and development of this State is available from low-head dam construction to further future industrial development and growth that might come to this great State.

We, the Salt Lake Hardware Co., who depend upon agriculture, logging, and mining and supplying their needs for our livelihood are anxious to go on record against the proposed high-head Hells Canyon Dam.

Respectfully submitted.

H. PAUL MILLS, *Boise Division Manager.*

STATEMENT OF MRS. O. F. SCHMIDT, OF BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am Mrs. O. F. Schmidt, a voter of precinct 5, Boise, Idaho. I have lived in Boise for nearly 30 years and owned property most of that time.

In regards to this Hells Canyon stretch of Snake River, it seems that project should be developed in the most economical way possible. Since the Federal Government has established the Federal Power Commission why not let them decide the issue rather than force it through Congress. Let the Federal Power Commission decide the better place. I am definitely opposed to Federal Government developing any natural resource where private enterprise does a satisfactory job just as the Idaho Power Co. has done so far. The taxpayer has enough to pay now.

STATEMENT OF LESTER F. SELDERS, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

These are the views unwarranted and unbiased by a person, or persons, organizations, companies, or anything concerning power.

I am firstly a firm believer in private enterprise. I also believe in cheap power, but do not believe it is available through Government enterprise by building dams and power units and then taxing people to maintain and operate same.

A very good example of this is TVA. The system cannot support itself, so the Government dips into tax money to subsidize same.

It is true that REA has helped the outlying farms and communities, but at the same time, they did not carry out all the things they started. Private power

companies had to take over and supply and maintain at least a portion of the lines today. This, of course, was built out of taxable money.

Of course, the power issue is of minority in comparison with the water and its resources in our community. Without water (irrigation) southern Idaho would be strangled to death and by that I mean giving CVA the authority they want and would get would mean just that.

Without water we have nothing and I mean whether it is business, farming, railroading, or whatever, we would have nothing. Let we farmers have a poor year and it reflects right back to the dealer, the merchant, the businessman, the wholesaler, the jobber, and eventually to the manufacturer.

With CVA or the high dam we would be affected right back to the tributaries of the Columbia River and that brings us right back to the very creeks in our community. We could be shut out of our resources.

In conclusion, let us keep Government out of business and not interfere with our resources (water mainly) and let private enterprise operate and maintain our power systems.

STATEMENT OF KENNETH G. SELF, SELF MANUFACTURING CO., TWIN FALLS, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

My name is Kenneth G. Self. I am owner of the Self Manufacturing Co., Twin Falls, Idaho.

I am opposed to the Congress of the United States acting on legislation to build a high Government storage dam at Hells Canyon for the following reasons:

(1) The Federal Power Commission has been delegated the authority by Congress to issue licenses for the development of power sites and as year-long hearings have been held on an application of the Idaho Power Co. to build a series of dams on the lower Snake River and an opportunity to present and develop technical testimony, including that of independent engineers of the Federal Power Commission, I, therefore, believe the Federal Power Commission should be permitted to render their decision as to which plan meets the test of comprehensive development and is in the public inteerst and this authority should not be usurped by Congress.

(2) As developed in recent hearings by the Army engineers in southern Idaho, storage of water on the Snake River should be in the upper reaches of the river and not near its mouth as greater utilization can be made of its water and less damage result from spring runoff.

(3) The irrigation interests of southern Idaho cannot be protected in a Federal Hells Canyon Dam bill unless an amendment is made to our Federal Constitution, because of paramount rights vested in Government under our Federal Constitution.

(4) I am a believer in private enterprise, which has given this country its high standard of living and I believe when private taxpaying industry can do the job using private money that it should be permitted to do so without interference from Government.

Therefore, for the above reasons, I am opposed to a high Government storage dam at Hells Canyon.

STATEMENT OF N. V. SHARP, CHAIRMAN, COMMITTEE OF NINE

My name is N. V. Sharp. I am a retired farmer and reside in Filer, Idaho. I have lived in Idaho since 1907, raised a family, and have owned and operated my own farms until I retired a few years ago.

I am a member of the board of directors of the Twin Falls Canal Co. and have been since 1924. I was president of the Idaho State Reclamation Association for 12 years (from 1937 until 1949) and upon retiring as president I was honored with a life membership in that association. Also I spent 4 years on the State Water Conservation Board of Idaho by appointment of the Governor, and I was 1 of the 10 he appointed to go to Salt Lake City in 1932 at which time the National Reclamation Association was formed. I was elected to the first board of directors and have served continuously in that capacity since that time—almost 24 years. I have served as a member of the committee of nine in Water District No. 36 for approximately 28 years and have been chairman for the last 8 years. This committee might be said to be the board of directors for operation and distribution of the waters of Snake River for

use in the Snake River Valley. Water District No. 36 encompasses the entire Snake River areas in Idaho from its upper reaches in southeastern Idaho to King Hill in south central Idaho. This includes more than 1¼ million irrigated acres. I am authorized to appear here in behalf of the committee of nine.

In addition, I am authorized to appear before this committee in behalf of the Twin Falls Canal Co. I should like to add that I was appointed by the president of the Idaho State Reclamation Association as chairman of a coordinating committee to appear in opposition to the legislation that was introduced in 1952 (H. R. 5743) which would have authorized the Hells Canyon Dam, and I did appear in opposition before the Subcommittee on Irrigation and Reclamation of the House Committee on Interior and Insular Affairs during the spring of 1952. I am now appearing in opposition to S. 1333 recently introduced in the Senate and to the several bills introduced in the House to authorize the Hells Canyon project.

The Twin Falls Canal Co. is comprised of over 200,000 acres of Carey Act project lands, situated on the southern side of Snake River in south central Idaho. There are a number of cities in the project, the largest being Twin Falls, with a population of approximately 20,000. This project is very highly developed and one of the most productive in the entire Northwest. The water for this project is diverted from the Milner Dam, the largest major diversion on the main stream of the Snake River. Our main canal carries 3,600 second-feet. Our major water right is natural flow. However, we have storage space in Jackson Lake of approximately 100,000 acre-feet and 152,000 acre-feet in American Falls Reservoir. Our project was financed and built by private enterprise. All the space that we have in these two reservoirs was paid for in cash before construction started.

The stockholders of this canal company by overwhelming votes at the last several annual meetings have adopted resolutions in opposition to the proposed Federal Hells Canyon Dam. Their views are best expressed by the resolution adopted at its last annual meeting on January 11 of this year. A copy of this resolution is attached to this statement.

Irrigation districts and canal companies representing the overwhelming majority of the irrigated area in southern Idaho have passed resolutions in opposition to a Federal Hells Canyon project.

There are a number of reasons why we are opposed to the authorization of a Federal high Hells Canyon Dam.

It is not an irrigation project nor does it have any irrigation features. It is a power project pure and simple. The future development and prosperity of southern Idaho depends upon the full utilization for beneficial consumptive uses of the waters of the Snake River and its tributaries. There are now 2,600,000 irrigated acres in the Snake River Valley and this is only the beginning. We are definitely opposed to any limitation on the future irrigation development in Idaho and we feel that the Federal Hells Canyon Dam would be a definite threat not only to future development but also to our existing water rights. While I am informed that there is some attempt to put some protective language in this bill, we do not believe it offers any real protection. As Congressman Budge said when these bills were introduced, "There is nothing to prevent some future Congress from repealing any protective language if it later appears that our irrigation water is needed to make this huge powerplant feasible." We in Idaho are very much concerned regarding our existing rights because of the claims by the Federal Government that private appropriators acquire no rights in navigable streams. There is a continuous threat by the Federal Government to extend Federal jurisdiction and control, irrespective of State laws, by interpreting its powers under the commerce clause to include the production of hydroelectric power, flood control, and watershed development. We are concerned about Federal control and domination over the water resources of the Western States under the guise of the commerce clause in disregard of State laws.

Furthermore, we are opposed to the project because private capital is ready, willing, and able to develop the power sites in the Hells Canyon stretch of the river. Upward of 90 percent of the irrigation development in the Snake River Valley has been initiated by private enterprise under State laws. We are fully in accord with the partnership concept of water resources development which means, as we interpret it, local determination of projects to meet local needs and Federal participation only where needed, without Federal control. This means maximum conservation of taxpayers' funds which is important to every citizen.

Furthermore, if this proposed dam is authorized and constructed by the Federal Government instead of by private capital the State of Idaho will not receive the taxes so vitally needed by the State for the future development of State projects.

The increased taxes payable by private power companies to the State as well as to the counties which would be affected, will lighten the heavy taxation load now borne by the citizens and industries of the State. Idaho is in desperate need of more revenue for roads, schools, etc. I am informed that the evidence in the record at the Federal Power Commission hearing in Washington indicates that the State of Idaho alone, and its public bodies, would receive annually approximately $4 million in taxes, if these projects are developed by private enterprise. Over the 50-year license period this would amount to approximately $200 million. This does not include a tremendous sum that would be paid to the Federal Government in income taxes.

In conclusion, we are further opposed to these bills because the question whether the Hells Canyon stretch of the river should be developed by the Federal Government or by private enterprise has been submitted to the Federal Power Commission. This is the agency that Congress has given the function and responsibility to decide this question. Hearings on the Idaho Power Co.'s applications extended over a year and the question has now been submitted to the Federal Power Commission. It has all the technical data before it. That Commission should be permitted to decide this question without any political interference.

I emphasize again that we are concerned that our existing water rights, and the water rights that will be acquired for future development of Idaho, are placed in jeopardy by this proposed project.

RESOLUTION

Whereas the future growth and development of southern Idaho depends entirely on its ability to expand and enlarge the future consumptive and beneficial use of water on new areas of land, as well as the preservation of all the water rights appurtenant to its presently irrigated areas; and

Whereas Idaho has many thousands of acres of high-grade land upon which it may be possible to economically apply irrigation water in the future; and

Whereas the only source of water to either supply the future needs of lands inadequately irrigated, or new areas to be irrigated in the future is from Snake River and its tributaries; and

Whereas it is paramount to the future of Idaho that no downstream hydroelectric developments be permitted unless all of the rights of Idaho to its future growth and development from an irrigation standpoint are fully and adequately protected; and

Whereas it appears that legislation that has been introduced in Congress to authorize the construction of a high Hells Canyon Dam by the United States does not adequately protect the rights of Idaho to expand and enlarge its use of irrigation water in the future and also may jeopardize many other economic rights of Idaho: Now, therefore, be it

Resolved, That the stockholders of the Twin Falls Canal Co., at its annual meeting on the 11th day of January 1955, are opposed to such legislation and urge that it be defeated, and that copies of this resolution be sent to all members of the Idaho congressional delegation.

STATEMENT OF J. E. SKALET, ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

We wish to register our protest against the pending plan to build a high Federal dam on the Snake River, in Hells Canyon, State of Idaho.

We have spent our lives working in the area served and supported by the North Fork of the Snake River, and our particular business has given us a thorough insight into the almost complete dependency of our great area on the waters of the Snake River, not only for our present but for any future development. In studying the proposed plan and its proposed use, together with the various legal opinions regarding same, it appears that ample proof has been well established such a Federal project would necessarily constitute great present and future damage to the highly important water rights of those of us who live in the upper Snake River Valley.

It seems apparent, from evidence given, that 90 percent of the benefit and use of the proposed Federal dam will go to the States of Oregon and Washington. While we are not familiar with the legal niceties of this situation, we are certain that anyone, giving an honest opinion, would agree it morally wrong for the Federal Government to permit such legalized theft of our rights by establishing

an authority which would supersede the sovereignty of the State of Idaho and permit our water rights, our careful planning of our water and irrigation systems, and our plans for future development of our area to be, in effect, sold down the river to our neighboring States.

We do not wish to see either Oregon or Washington retarded in their needs, but we do violently protest the flagrant injustice of aiding those States at such a huge sacrifice to the people who have their lives invested in the upper Snake River Valley.

We respectfully urge and hope the Senate committee will refuse the proposal to construct the Hells Canyon Dam.

STATEMENT OF DEAN C. SMITH, BUHL GRANGE, NO. 214, BUHL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Be it known that Buhl Grange No. 214 goes on record that they are definitely opposed to United States Government building Hells Canyon Dam.

STATEMENT OF J. FRED SMITH, MAYOR, CITY OF REXBURG, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am mayor of the city of Rexburg, one of the oldest settlements in the upper Snake River Valley, which was laid out by Brigham Young. Our forefathers built the ditches and brought the water out from the Snake River. The city of Rexburg has considerable water rights in the Snake River. Our forefathers built the ditches and brought the water from the Snake River at their own expense. We didn't ask the Federal Government to do it. I am not against the Federal Government helping and advancing its credit. We have been very satisfied with private power. We are served by the Utah Power & Light Co., and we can't see why we should take our tax dollars and let the Federal power go tax free because the power companies have helped us build up this community. The people of my community are opposed to the erection of the Hells Canyon Dam.

I am sorry that I am unable to attend this hearing. It has been called so far away from the people that we are unable to make a protest in person. Also, the testimony has been limited to 5 minutes. This matter has received the attention of the Army engineers, the Bureau of Reclamation, and the Federal Power Commission. They have spent hours, days, and years studying the problem. We are not in favor of this rush to build Hells Canyon Dam by the Congress, after taking a bird's-eye view of 2 or 3 hours in this territory, when the other agencies have spent years.

We are fearful of our water rights. We have learned from experience that when Government takes hold it is all powerful. There are so few people in Idaho they could well cut off all the water rights and say that it was necessary for the States of Washington and Oregon because there are so many more people there that our water be turned to those States.

I think the headwaters of the Snake should be explored as the Army engineers are doing and that all of the storage be at the source as much as possible. Then the water can be turned down and used over again, and we won't be deprived of these water rights. I am protesting in behalf of the city of Rexburg against the building of Hells Canyon Dam.

STATEMENT OF R. D. SMITH, DURKEE, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am a rancher in Baker County, Oreg.

I believe in private enterprise and that our local power company should develop the power sites in the Hells Canyon area.

Our State is in need of additional valuation to help relieve our tax burden.

The United States was founded on private enterprise and thus has become the greatest nation in the world.

I am aware that the Federal Power Commission has all the facts; let's leave it up to them to make the decision.

STATEMENT OF JOHN SOMMER, TWIN FALLS, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

My name is John Sommer. I am a farmer, and live 2 miles south of Twin Falls, Idaho. I am opposed to the Federal Government building a high dam at the Hells Canyon site, as proposed in Senate bill 1333. I believe that such a dam would be a waste of taxpayers' money when private industry is ready and willing to develop this stretch of the river.

This proposed Government project would deprive Idaho of needed tax revenue. But, most important of all, this proposed project would seriously conflict with our water rights in that there is not enough water in the Snake River to provide for future upstream irrigation, and, at the same time, provide for the operation of a high dam. In case of conflict between the water users and the Federal Government, I believe that the Federal Government would win.

I believe that this Government-proposed dam would be excessively costly and that ultimately the power would be used for the coastal cities and not for Idaho. I believe that the coast should develop power from those numerous sites closer at hand and leave Idaho resources for the people of Idaho.

STATEMENT OF GORDON SQUIRES, EDITOR AND PUBLISHER, CASCADE NEWS, CASCADE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am opposed to the Government spending upward of a half billion dollars of taxpayers' money for Hells Canyon when a business-managed company is ready, willing, and able to do the job at less cost, using venture capital.

STATEMENT OF GENE STANFORD, OWNER OF THE STANFORD STORE AT WEISER AND THE BEN FRANKLIN STORE AT PAYETTE, WEISER, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am opposed to the proposed Federal dam in Hells Canyon.

1. Public power is subsidized by tax money, and it costs more than industrial power. Part of the high cost of public power shows up in loss of taxes that would be paid by industrial power.

2. Public power creates regional power shortage because it stifles power development by industry. We have plenty of power in Idaho, while the socialized power regions on the coast are short.

3. Snake River for irrigation and power is Idaho's largest resource. I don't want to build a dam at public expense to give this resource to other regions which already have much more than we do.

STATEMENT OF NORMAN V. STEDTFELD, ATTORNEY AT LAW, POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

As a private citizen I desire to advise you my intense feeling against Government construction or operation of the proposed high dam at Hells Canyon.

It is my firm conviction that Government's place is in regulation of commerce between the States and that it should not in any way become a party to the construction or operation of a dam at Hells Canyon, particularly in that there is no lack of private ability, resources, or planning concerning the development of the hydroelectric potential of the Snake River in that area.

STATEMENT OF L. N. STOCKTON, JEROME GRANGE NO. 210, JEROME, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Jerome Grange No. 210 represents approximately 225 farm members and has gone on record unanimously opposing a high dam being built by the Federal Government and is in favor of the 3 low-head dams being built by private enterprise, which will develop all the power available.

STATEMENT OF JOEL STONE, CALDWELL HIDE CO., CALDWELL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

It is most gratifying to us citizens of this valley to have you and your committee set in open session and attempt to find out the feelings of the citizens of this valley on one of the most vital problems of this region.

I wish at this time to express to you my feelings on this subject of the 1 high dam and the 3 dams proposed by the Idaho Power Co.

I have, I assure you, given this problem long and thoughtful study. It seems to me that the Idaho Power Co. proposal is by far the best and quicker way to get the job done for the following reasons:

1. The three dams will produce nearly as much power as the high one.
2. Idaho Power Co. is ready to do it now when the power shortage is becoming critical.
3. The problems of reclamation, navigation, and recreation are protected in the three-dam proposal.
4. The vast experience generating and developing power and dealing with the people of this region make them the logical instrument for harnessing the power in the Snake River.
5. The amount of revenue returned to the State and Federal Treasury through taxes by the Idaho Power Co. is of great benefit to the people.

I hereby wish to assure you that I arrived at these conclusion after long and careful study and was not urged by anyone in the Idaho Power Co. to make this statement.

STATEMENT BY MARION STROEBEL, MERIDIAN, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am opposed to the Government building a high dam at Hells Canyon because the Federal debt is at an all-time high and why shoud the Federal taxpayers spend more than one-half bilion dollars to build the dam when a private enterprise is willing to develop the Snake River area.

The Federal Power Commission legal staff has recommended, after thorough investigation, that the Idaho Power be authorized to build the three low-head dams because they have found that the proposed projects are best adapted to a comprehensive plan of development of Snake River as required by the Federal Power Act. And now, after all the money has been spent on this investigation, the same people who insisted that the FPC should make the decision are advocating that the findings should be discarded and a decision be made on a political basis.

I am also opposed to any move toward centralization of power in the Federal Government.

STATEMENT OF BLAINE STUBBLEFIELD, WEISER, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am opposed to construction of a Federal high dam in Hells Canyon.

1. Recreation benefits would be inferior.

(*a*) The specified drawdown would produce unsightly and ill-smelling shorelines.

(*b*) The pool would inundate most of the low trough of the canyon, which is about 1,000 feet deep. This would eliminate much of the scenic values.

2. Navigation benefits would be limited.

(*a*) The proposed high dam could not be passed by boats to the lower river or dam pools.

(*b*) Claims by advocates of the proposed high dam that the resulting pool could be navigated from Weiser and the lower valley, are not based on facts. The proposed drawdown would take the tail of the pool down to the r gion of Robinette, or Sturgill, more than 50 miles below high-level point, of slack water. That would leave one 8.5 mile rock shoal below Burnt River, which is unnavigable nearly all year, even by outboard boats, and several shorter unnavigable shoals.

(*c*) The widely fluctuating pool level of the high dam would make shore bases, docks, and recreation areas impractical or at best inconvenient and unsightly.

3. Few if any of these conditions would result from the proposed low-dam program, which would produce much better recreation and navigation benefits.

4. Other objections to the proposed Federal dam.

(*a*) Storage and flood control should be multiple reservoirs in Snake River headwaters, to provide gravity flow to irrigable lands and to control floods, if any, above potential flood damage areas—at much lower cost.

(*b*) Snake River originates in Idaho and this State, being mostly mountains, needs all the power we have for our own industry and water for the development of our limited lands.

(*c*) Industry is offering to develop the upper canyon of Snake River at a maximum of one-third the estimate cost of the proposed Federal dam—more likely it will be nearer one-tenth. There is no point in hanging this cost on the taxpayers and depriving them of large potential tax payments by industry.

STATEMENT OF F. STURDEVANT, PRESIDENT, MILLER BROS. CO., ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, IDAHO, APRIL 4, 1955

We are absolutely opposed to any downstream high-dam storage on Snake River which would naturally cancel out any upstream development.

This Snake River water is a natural resource of Idaho and should remain in the powers of Idaho, and this water should not be given to benefit the States of Oregon and Washington.

STATEMENT OF MYRON SWENDSEN, JOINT OWNER AND MANAGER, OF ENGINEERING SALES SERVICE, INC., BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, AT BOISE, IDAHO, APRIL 4, 1955

My name is Myron Swendsen; my home is in Boise, Idaho; my occupation is joint owner and manager of Engineering Sales Service, Inc., dealers in heavy construction equipment; my business address is 410 Capitol Boulevard, Boise, Idaho.

In addition to my reference as a business manager, I am a graduate electrical engineer, a licensed civil engineer for Idaho. I served 3 years as assistant commissioner of reclamation for the State of Idaho, and practiced as consulting engineer in southern Idaho for approximately 18 years.

From the viewpoint of an owner of a business enterprise in Idaho, I wish to make a statement of my views of the proposed Federal project known as Hells Canyon Dam, and the effect of the federally constructed and operated project at this site would have on southern Idaho and eastern Oregon.

I have made a careful examination of this proposed project and the proposed method of operation, and I have concluded that the best interests of the State of Idaho would be best served by development of the power resources of this section of Snake River by the already established private utility.

My opposition to the development by Federal agencies may be summarized under three headings, namely:

1. The proposed method of operation to utilize 3.88 million acre-feet of storage in the Hells Canyon Reservoir to equalize the flow of Snake River for flood control, navigation, power production at site and downstream sites, and for recreation purposes, will bring about some conditions under which there is considerable question as to the benefits to be derived, and, in my opinion, in some cases definite damages may result.

For instance, under the proposed method of operation, this 3.88 million acre-feet of storage space will, during short water years, be drawn down to a level of 289 feet below the high-flow line. Under these conditions only 313 feet of the total 602 feet would be effective for power production, which would greatly induce the at-site power production. This condition will be further aggravated by the fact that with the storage at its lowest point, and effective power head reduced, it will be necessary to start storage by shutting down releases and resultant further reduction of power production to a minimum of 66,000 kilo-

watts, and under normal operations in short water years, this condition would prevail during the spring and early summer season, at a time when our irrigation pumping load will be at its peak. Now with only 66,000 kilowatts available at Hells Canyon during this peak power demand, where will southern Idaho and eastern Oregon get its power? Under the proposed Federal development plan, we would have to look to the Bonneville Power Administration to make up this deficiency, and it would only be available if Bonneville had any surplus power after the already contracted for power and the preference customers have been supplied, and if the past can be any criterion for the future, there just would not be any available to supply the 1961 requirements of some 500,000 kilowatts of increased load for this area. The further argument against supplying this area from the Bonneville system would be the large transmission losses over the some 400 or 500 miles of transmission lines to our load centers. I do not think we should tie our power requirements to the ability of this perpetually power short system, even with the promise of lower rates. We would prefer that this power potential of this stretch of the river be developed for this area with prior and first rights to it, and if any surplus is available, it can be transmitted to the Bonneville pool through the existing transmission system, or through the direct tie line with Bonneville.

Under the proposed development by private utility, Idaho and eastern Oregon would always have available the full power production, if needed, at a rate fixed by proper regulatory body. We prefer an adequate and sure supply at a fair rate instead of a promise of a lower rate with only an unsupported promise of the required power to properly and adequately support our requirements. And if consideration is given to the taxes paid by the private utility, it is doubtful if the promised lower rate would be realized.

2. Claims of the Federal development at this site to benefit navigation are definitely misrepresented. For instance, how could navigation above Lewiston to Lime Point be maintained, when storage is being increased at Hells Canyon and the flow past the dam is reduced to accumulate storage? Under the proposed method of operation, the flow released at Hells Canyon would at times be reduced to 2,000 cubic feet per second, or less, with a normal flow of the river at this point at a low of 10,000 cubic feet per second, this would result in a reduction of 8,000 cubic feet per second in the flow past Lime Point, and this, during the summer months when the flow of Salmon and other streams below Hells Canyon are at a minimum, would result in a condition that would make navigation of this stretch of the river impossible. United States Army engineers have estimated that 13,000 cubic feet per second flow in this stretch of the river is necessary to make it reasonably satisfactory to navigation.

Navigation in the only intrastate section of this stream would be definitely damaged by this type of operation, yet in the estimate of benefits to navigation, some $98,000 annual benefits are claimed in the feasibility report.

3. Large benefits are claimed for recreation. Now just how are these recreation facilities going to be maintained at a shoreline 289 feet below the maximum flow line. Roads could not be built to the lakeshore, as they would be under water during full reservoir conditions. Just what is the plan to overcome this condition? And this is the condition that would prevail during the spring and early summer, when the reservoir is at its lowest level. The claims of benefits are grossly overestimated, and a comparison of recreation values of the proposed private development plan with the Federal plan shows very much in favor of the low-dam development.

For this and other reasons of engineering nature, which are too extensive to present at this time, I request that this committee reject S. 1333 and that the determination of the development for this stretch of the river be entrusted to the Federal Power Commission with the end that permission may be granted to the Idaho Power Co. to construct the proposed multiple dam system, so that we may be assured of the use of this needed power to meet our immediate future needs.

The only other alternative is for the power company to build steam powerplants and meet the growing needs for power with an increase rate to meet the increased cost of thermal production.

67129—56——32

STATEMENT OF JOHN P. TATE, COMMISSIONER, ADA COUNTY DRAINAGE DISTRICT NO. 3, BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

My name is John Tate. I reside in Boise, Idaho. I am a commissioner of the Ada County Drainage District No. 3, which is responsible for the drainage of about 4,200 acres of land in and around south Boise, south of the Boise River and north of the New York and Ridenbaugh Canals. The population within our district exceeds 10,000 people.

We are particularly interested in the plans for development of the water resources in the Snake River Valley to the end that drainage is properly considered in any plan developed. Our drainage problem is gradually becoming more severe as the area develops and we seek to increase the productivity from our land. It has not been uncommon in recent years for us to discover water standing in the borrow pits along our roads, and shortly thereafter cattails and other water-loving plants growing. Likewise, this water in places is coming so close to the surface in our fields that the land is not producing to its capability, and of course, we have difficulties in moving farm machinery over it. Orchards have ceased to produce, the trees have died, and pasture has become valueless.

In addition to these problems from an agricultural point of view, in the areas that have built up as residential areas, basements are almost impractical because of the excessive cost of waterproofing them, or the extreme dampness experienced. In some cases, the water actually stands in the basements as high as 2 feet.

Over the years, in an effort to alleviate this drainage problem, we have constructed drainage ditches and have laid underground tile. Both methods are expensive both in first cost and upkeep. The ditches, particularly, are wasteful of production land, which amounts to about 7 acres per mile of ditch or in terms of value of land at $500 an acre, $3,500 per mile.

In both of these methods of solving the drainage problem, the water is wasted and lost for further irrigation. We feel the most reasonable and most economical solution to our drainage problem is to use wells to pump this drainage water to the surface and into existing irrigation canals so that two purposes will be served, (1) the drainage of the land, and (2) irrigation of additional land.

In order to determine the effectiveness of drainage by wells, our drainage district constructed a well in 1952 and have operated it each year since that time. The well cost us approximately $6,000, and the cost of power for pumping this water has been approximately 50 cents per acre-foot. The well has been very successful in lowering the water table to dry up the fields, borrow pits, and basements, and test wills indicate that the water table at a quarter-mile radius has been lowered about 24 inches.

This pumping of drainage water was the motivation of the Sloan plan for reclamation of the Mountain Home Desert, because it supplied the additional water required at a reasonable cost. The use of this water for reclamation of the Mountain Home Desert would assist the farmers experiencing a drainage problem in the cost of drainage and supplies the water required for the new development. We are most anxious to see the Mountain Home project developed in accordance with the Sloan plan, so that we will obtain the relief from our drainage problem. We would be opposed to any other plan which would not embody a solution to our drainage problem, or would delay its early accomplishment. We are of the opinion that if development of the Mountain Home project is deferred until some Federal power project may be constructed under the guise of its necessity to assist in repaying irrigation cost, it will be many years before we experience the help that we need on drainage, and our soil will have long since ceased to be productive. Therefore, we urge the committee to reject S. 1333.

STATEMENT OF HERBERT A. TIEGS, OF NAMPA, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955.

I am Herbert A. Tiegs, of Nampa, Idaho, and I have been a farmer in Idaho since 1920. I am a firm believer in private enterprise and oppose the Federal Hells Canyon program.

I feel Federal control will jeopardize water rights for future irrigation developments, and, also believe large blocks of power transmitted immediately to other regions will not be available for future use in Idaho.

Also, since the Federal budget is not balanced, we should let private enterprise develop this project and make available more tax dollars to help reduce the Government debt.

RESOLUTION OF TWIN FALLS CHAMBER OF COMMERCE, TWIN FALLS, IDAHO

Submitted this 4th day of April 1955, before the United States Senate subcommittee hearings on Hells Canyon Dam at Boise, Idaho

Whereas the Twin Falls (Idaho) Chamber of Commerce of Twins Falls, Idaho, is vitally concerned with all aspects of the ultimate development of the immediate area it represents; the State of Idaho; and governmental action on all levels; and

Whereas the board of directors of the Twin Falls (Idaho) Chamber of Commerce in executive meeting of March 30, 1955, have carefully considered this and other area hearings relative to Federal legislation designed to authorize a dam on the Snake River at a point known as Hells Canyon; and

Whereas public information released by this committee has signified that all technical hearings relative to the merits of the proposed Hells Canyon Dam Federal legislation will be heard in Washington, D. C.; and

Whereas the Federal Power Commission has been conducting hearings of a like nature wherein all of the technical information desired by members of this committee by additional hearings has been thoroughly explored and is available as both public and governmental property; and

Whereas the members of the board of directors of the Twin Falls (Idaho) Chamber of Commerce are appreciative of the efforts of members of the congressional delegations of neighboring States to avail themselves of the water resources of the Snake River by whatever procedure possible; and

Whereas it appears highly inconsistent in hearings of this nature which appear to be designed to make the most of political expediency rather than to determine public opinion by hearings of sufficient length and within agricultural areas more greatly affected by the Snake River; and

Whereas the Twin Falls (Idaho) Chamber of Commerce is dedicated to all programs designed to first guarantee the greatest ultimate agricultural and industrial use of the Snake River watershed to the State of Idaho, and secondly, where available as determined by qualified engineering and not legislation, to downstream interests: Therefore be it

Resolved by the members of the board of directors of the Twin Falls (Idaho) Chamber of Commerce this 30th day of March 1955, That we condemn this evident waste of tax funds for the purpose of hearings of obvious political nature while the subject material is in the process of being resolved by the Federal agency provided by law to weigh such matters; and be it further

Resolved, That the members of the board of directors of the Twin Falls (Idaho) Chamber of Commerce are unalterably opposed to this or any Federal legislation which might place the Snake River watershed in Federal control by this or any other subsequent Congress of the United States.

Signed this 1st day of April 1955, in behalf and on the instructions of the board of directors of the Twin Falls (Idaho) Chamber of Commerce.

H. W. MOFFAT, *Manager*.

STATEMENT OF LESTER L. REINKE, TWIN FALLS COUNTY FARM BUREAU, TWIN FALLS, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, BOISE, IDAHO, APRIL 4, 1955

We, as members of the Twin Falls County Farm Bureau, wish to reaffirm our previous stand of being opposed to a high Federal dam at Hells Canyon.

We represent a membership of 945 farmers in Twin Falls County. There is a total of 202,000 acres dependent on water from the Snake River, and we feel that our water rights would be jeopardized by this high dam.

The amount lost in taxes from the small dams would amount to approximately $3 million per year, to the State of Idaho.

It is our belief that private enterprise should be allowed to develop the region keeping their tax dollars in circulation, and relieving our tax burden, also the tax burden of the rest of the Nation.

The dam will not catch the dangerous flood waters as the Salmon and Clearwater Rivers are both below the proposed sight.

At the hearing about 3 years ago before the Interior and Insular Affairs Committee in the House, it was pointed out that there was not sufficient water to justify the high dam without interfering with upstream water rights.

We also feel that this water comes from Idaho and Wyoming and we should not jeopardize our water rights to go in to other States.

STATEMENT OF TWIN FALLS GRANGE NO. 216 PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

We, the members of Twin Falls Grange No. 216 have in the past and present, gone on record as opposing the Federal Government constructing a high dam at Hells Canyon.

Again by unanimous decision we voice our opposition to this project. We feel it would be impossible to adequately protect our previous water rights with the construction of the Government high dam.

TERRY SULLIVAN,
Master, Twin Falls Grange.

STATEMENT OF TWIN FALLS COUNTY POMONA GRANGE NO. 11, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Twin Falls County Pomona Grange No. 11 reaffirms its stand opposing a Federal high dam at Hells Canyon.

EARL A. YOUNG, *Master.*

Executive committee: Jim J. Drown, Terry Sullivan, Don K. Hicks, Richard W. Morgan, William W. Noble, Truman Rathbun, Ernest H. Wolfe, Dean C. Smith, Fred W. Koch.

STATEMENT OF TWIN GROVES CANAL AND IRRIGATION CO., ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The Twin Groves Canal and Irrigation Co., serving portions of Fremont County and aproximately 54 farms in the area, wishes to express its opposition to Senate bill 1333, and similar legislation intended to authorize construction of a Federal dam at Hells Canyon, for the reason that we feel that this legislation would seriously impair the water rights of all Idaho citizens.

This is not a new subject in this area. We have heard all of the arguments for and against construction of such a dam through investment of tax funds and we are thoroughly convinced that there is no protection available under congressional legislation that will guarantee our water rights as against the Federal Government.

ALEX O. COLEMAN,
Secretary-Manager.

STATEMENT OF LEM UTTER, APPLETON GRANGE NO. 127, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 155

The Appleton Grange No. 127, membership of 72, stands opposed to the Hells Canyon high dam.

They believe that it will jeopardize the water rights of the upper Snake River reclamation's projects.

That private dams will be able to generate all power available, make this power usable at a much earlier date and furnish a source of taxable revenue, whereas a Government project will be continued expense to the taxpayers.

Also, we feel that a high dam can never be filled without taking the water from the previously established irrigation projects.

STATEMENT OF MR. AND MRS. H. F. VAN ATTA, OF BLACKFOOT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

Both my husband and I are concerned over the renewed controversy over the high Hells Canyon Dam. We thought extensive hearings, satisfactory to both Republicans and Democrats, were held and that it was now up to the Federal Power Commission to render a decision. It seems to us that the new bills introduced in both the House and the Senate are simply to confuse the issue. Therefore, we wish to add our names to those opposed to the new bills being brought out and ask that you (Senator Henry C. Dworshak) continue to exert all possible influence in seeing that a decision is forthcoming on the previous hearings.

We are very appreciative of the monthly reports and other pertinent information you (Senator Dworshak) send us from time to time.

STATEMENT OF D. A. VAN SLYKE, WILDER, IDAHO, PRESENTED TO THE SUBCOMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, IDAHO, APRIL 4, 1955

I speak on behalf of the highest official in the United States. I speak for private citizen, D. A. Van Slyke.

I am a partner in a farming operation which annually pays an electricity bill of over $1,400. I have never yet plugged in an appliance or thrown a switch when there was not ample power to operate the machinery. Furthermore our business has never been denied additional power service when we requested it from our power company.

I have not bought a new suit in the past 11 years. My wife's newest coat is over 8 years old. My kids wish we could afford a television set. My family has outgrown our 4-room house. We would like to install a bathtub. We need to make provision for the college education of our youngsters 10 to 15 years hence. We would like to make substantial contributions to the support of our church and to the American Cancer Society as well as to the heart fund.

Under these conditions we do not care to invest our resources in powerplants. We have no objections to others investing in such plants if they see fit to do so: but we object to being forced by law to construct projects for which we have no need, thus being deprived of spending power which would give us more satisfaction spent for other goods and services.

We would much rather run the risk of having our switches pulled for failure to pay our power bill than to have them pulled because we did not vote correctly.

STATEMENT OF EMERY L. VASSAR, OF VASSAR HATCHERY AND FARM, CALDWELL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am opposed to the Hells Canyon project for the following reasons:

First, I do not think the Federal Government should interfere or assume any responsibility that can be adequately handled by private money or private industry. It does not make sense to me for the Federal Government to spend around

a half billion dollars for Hells Canyon when a business-managed company is ready, willing, and able to proceed now, at less cost, using venture capital.

Second, Hells Canyon would pay no taxes, thereby placing a permanent burden on the taxpayers of this area; whereas, a private-owned project would pay millions of dollars annually to help support Federal, State, and local government.

Third, based on the United States Constitution and Supreme Court decisions the Federal Government cannot guarantee State rights. Therefore, the Hells Canyon project would jeopardize the water rights of all present water users in our State which is the very life and blood of our agriculture.

Fourth, the Federal Power Commission in its brief filed with the examiner on November 4, 1954, found that Idaho Power projects are best adapted to a comprehensive plan of development of Snake, as required by the Federal Power Act. I am also advised, from good authority that FPC's legal staff has recommended that the Brownlee, Oxbow, and Hells Canyon projects proposed for development by Idaho Power Co., be authorized by the Commission instead of a Federal dam at the Hells Canyon site.

Fifth, I feel that it is undemocratic and un-American for the Federal Government to come into a community or State and attempt to deprive the individual citizen of his property rights and voting rights by forcing on the people a monstrosity such as the Hells Canyon project. An example of this kind of domination was effected in the State of California a short time ago, and I am opposed to this method of dictatorship in every respect.

STATEMENT OF E. D. VINCENT, MEMBER OF THE BOARD OF DIRECTORS, AMERICAN FALLS RESERVOIR DISTRICT

My name is E. D. Vincent, and I live near Filer, Idaho. I settled on the Twin Falls tract in 1920 and farmed near Filer until my retirement a few years ago.

I am a member of the board of directors of the American Falls Reservoir District, and I am appearing here in behalf of the board of directors of the American Falls Reservoir District in opposition to the bills to authorize the Federal Hells Canyon Dam.

The board of directors of the American Falls Reservoir District has repeatedly placed itself on record in opposition to the proposed Federal Hells Canyon project. We are in full accord with the irrigation districts and canal companies representing the overwhelming majority of the irrigated acres in southern Idaho, comprising in excess of 2½ million acres, which have passed resolutions in opposition to a Federal Hells Canyon project.

The American Falls Reservoir District is an area comprising in excess of 400,000 acres of irrigated land in southern Idaho, in the counties of Bonneville, Bingham, Power, Gooding, Jerome, Elmore, and Twin Falls. It is one of the largest, if not the largest, irrigation districts in the United States. It embodies various irrigating systems between Idaho Falls and King Hill. Practically the entire area of land included in this district has been devoted to agriculture uses by irrigation for many years prior to 1920. The water supply is derived from the Snake River and is made available to the land by diversion through existing independent irrigation systems. In the early 1920's it was found that while the water supply was adequate for the irrigation of the lands in normal years, due to the fluctuations of flow of the Snake, the existing water supply was insufficient for the complete irrigation of the lands in this area in low-water years and was insufficient for any expansion. The district was therefore organized in 1924 for the purpose of securing additional storage water.

Investigations showed that the American Falls Reservoir site was the most advantageous and best situated of any sites in the watershed at that time. The Bureau of Reclamation became interested in the enterprise and entered into contracts with various irrigation districts and canal companies in Snake River Valley in which it undertook to construct a reservoir at American Falls for the joint use and benefit of these districts and canal companies and for the Government's proposed Minidoka extension project. The purpose of organizing this district was therefore to secure additional storage water and to provide a means of financing the cost and to participate in the operation and maintenance of the reservoir along with the other owners. The district issued bonds and paid the United States in full for its share of American Falls before the reservoir was even constructed. This constituted approximately one-half of the cost of this great dam which has a reservoir capacity of 1,700,000 acre-feet.

The American Falls Reservoir District therefore feels that it has a real stake in the development of irrigation in southern Idaho. Our main objection to the proposed Federal Hells Canyon project is that we believe it would constitute a threat to our existing water rights, as well as a threat to future water rights that will be required to irrigate many hundreds of thousands of acres in the future. The future development and economy of southern Idaho depends upon the complete utilization of its only source of water, the Snake River and its tributaries. There are now being irrigated in southern Idaho approximately 2,600,000 acres, and this is only the beginning. It is estimated that there are an additional 2 million acres of irrigable land that can be irrigated from Snake River. We are definitely opposed to any limitation on the future irrigation development of Idaho, and we feel that the Federal Hells Canyon Dam, if constructed, would constitute a definite threat not only to future development but also to our existing water rights. We do not believe that any protective language can be placed in this bill which would protect us in the future. I would like to and that this proposed project is purely a power project and will not irrigate an acre of land. After all, power is available from other sources, but you just cannot manufacture water.

Furthermore, we are opposed to the construction of the proposed Federal Hells Canyon Dam, because we believe that where private enterprise is willing and able to develop power sites in this stretch of the river that it should be permitted to proceed under the laws of the State of Idaho. We heartily endorse the partnership policy of water-resource development. In fact, it has long been used in this State. An example is our own district, where we financed approximately half the cost of building American Falls Dam. More than 90 percent of the irrigation development in the Snake River Valley has been initiated by private enterprise. It has worked successfully in the past and I see no reason why it will not work successfully in the future. Furthermore, if this dam is constructed by the Federal Government the State of Idaho will not receive any taxes, which are badly needed by the State. On the other hand, if constructed by private enterprise, the taxes payable to the State will greatly lighten the heavy taxation burden now being borne by our own citizens.

We are further opposed to these bills, because we understand that the question whether the Hells Canyon stretch of the river should be developed by the Federal Government or by private enterprise has been submitted to the Federal Power Commission after lengthy hearings on the applications of the Idaho Power Co. Congress has given that agency the duty and responsibility to decide this question. Certainly Congress should not attempt to take any action in this matter until after the Federal Power Commission has handed down its decisions on the Idaho Power Co.'s applications.

I want to emphasize again, however, that our primary concern is the protection of our water rights, which we believe are threatened by the proposed project.

STATEMENT OF OGLE WALL, THE NORTH SIDE POMONA GRANGE NO. 6, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The North Side Pomona Grange No. 6, representing approximately 500 members, has consistently voted unanimously as being opposed to the building of a high dam at Hells Canyon by the Federal Government when private capital is available and anxious to develop the power to full capacity at no cost to the taxpayer.

STATEMENT OF STANLEY WALTERS, RESOLUTIONS COMMITTEE, FILER GRANGE NO. 215, FILER, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Whereas a bill to authorize construction of a high dam at Hells Canyon has been introduced in the House and also a bill for the same purpose has been introduced in the Senate, H. R. 4740 and S. 1333, respectively; and

Whereas the first paragraph of bill H. R. 4740 reads as follows:

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That in order to foster comprehensive development of the resources of the Snake River and its tributaries, the Con-

gress, in the exercise of its constitutional authority to provide for the general welfare, to regulate commerce among the States, and to make all needful rules and regulations respecting property belonging to the United States, and for the purposes, among others, of controlling and utilizing the Snake River and its tributaries for beneficial objects, including generation of hydroelectric power and energy for the national defense and other purposes, irrigation of lands, navigation and flood control, and for purposes incidental to any of the foregoing, including providing financial assistance to Federal reclamation projects, the Department of the Interior, under the supervision and direction of the Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized and directed to construct, substantially in accordance with the physical plans set out in the reports referred to hereinafter"; and

Whereas this said first paragraph (above) rests complete authority in Washington, D. C., regarding the use of the waters of the Snake River, thereby putting the water rights of southern Idaho in jeopardy; and

Whereas the following statements from the Library of Congress support the above contention, to wit:

At the request of Congressman Hamer H. Budge, the Legislative Reference Service reviewed the various bills which previously had been before Congress to authorize a Federal dam at Hells Canyon, and made an analysis of the effect those bills would have, if enacted, upon Idaho water rights acquired under State law.

After reviewing the provisions of the Idaho constitution relating to ownership and use of water, the analysis states as follows:

"* * * any claim of State ownership of water must be reconciled with Federal constitutional power.

"To be considered, therefore, in connection with the foregoing constitutional and statutory provisions of the State of Idaho is the supremacy clause of the Constitution of the United States found in clause 2 of article VI. That clause states that the Constitution of the United States and the laws of the United States which shall be made in pursuance thereof shall be the supreme law of the land, and the judges in every State shall be bound thereby, anything in the constitution or laws of any State to the contrary notwithstanding. The United States Supreme Court has used this clause on numerous occasions to strike down provisions of the State constitutions and State laws.

"* * * it is too well settled for argument that if Congress enacts a law or amends a law in the exercise of a constitutional grant of power, State constitutional and statutory provisions in conflict with that law or its amendment cannot prevail.

"This brings us to the main question underlying this whole problem, which, as we see it, can be stated bluntly as follows:

"In the event, after the authorization and construction of the Hells Canyon division, there is insufficient downstream flow for its operation, could the Congress in the exercise of constitutional powers, require release of waters from above and thus curtail beneficial use, under applicable State and other laws, in those upper areas? Based on applicable court decisions, the answer is in the affirmative.

"Such protection, as we have heretofore indicated, is not absolute, and cannot be absolute, because of the constitutional powers of Congress that are involved. In view of past decisions of the Supreme Court, a constitutional amendment would be required to divest Congress of its power and vest complete control of these water resources of navigable rivers in the States;" and

Whereas, in view of the foregoing conditions, we firmly believe that it is absolutely impossible to protect the water rights in southern Idaho, in any kind of a bill authorizing a Federal dam. Only by an amendment to the Federal Constitution can this protection be had: Therefore be it

Resolved, That we go on record as unalterably opposed to construction of a Federal dam at Hells Cannyon site.

(Signed) STANLEY WALTERS.

STATEMENT OF WENDELL CHAMBER OF COMMERCE, WENDELL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

The Wendell Chamber of Commerce met in regular session on February 12, 1952, and entertained much discussion on the subject of a high Federal dam in Hells Canyon. The group favored private development of this reach of the river, because they didn't believe that tax money should be spent on such a project, when private enterprise is ready, willing, and able to develop the same area of the river.

GEORGE WAHLER,
R. O. WARD,
Representatives.

RESOLUTION OF BOARD OF DIRECTORS OF THE WEST SIDE DITCH CO., OF BLACKFOOT, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, AT BOISE, IDAHO, APRIL 4, 1955

At a special meeting of the board of directors of the West Side Ditch Co., an incorporated irrigation company, held March 30, 1955, the following resolution was unanimously passed by the board with all members voting.

"*Resolved*, That we, the board of directors of the West Side Ditch Co., an incorporated irrigation company, request that the Idaho delegation in Congress use its influence relative defeat of S. 1333 and H. R. 4719; H. R. 4739; H. R. 4730; and H. R. 4740: Be it further

"*Resolved*, That the matter of developing the Hells Canyon stretch of the Snake River be left to the decision of the Federal Power Commission."

AUSTIN STOVER, *Secretary.*
EMERY POULSON, *President.*
STANLEY J. JENSEN, *Director.*
LAVAR WHITE, *Director.*
GEORGE A. JENSEN, *Director.*
GEORGE H. CLARK, *Director.*

STATEMENT OF A. B. WHITE, OF BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

The undersigned has lived in Idaho since 1892 and has seen Idaho develop from jackrabbits and sagebrush to one of the most highly productive States in the Union.

This unimpeachable fact we owe very largely to the Idaho Power Co. and its predecessors and it would be criminal politics to refuse us the permit for the Idaho Power Co. to build its three dams in Hells Canyon for the benefit of all the people of Idaho who own the waters of the Snake River.

STATEMENT OF O. C. WHITING, WEISER, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I hereby respectfully protest the Federal Government's development of the proposed Hells Canyon project, because:

1. Powerwise it will rob the local taxing units of greatly needed revenues.
2. Flood control is inadequate because as proposed will only take care of the large coast cities and leave the inland towns as is. It does not offer control of the floodwaters from the Clearwater and Salmon Rivers.
3. With firm offers in hand from private enterprise let's still participate in the successful pioneering spirit that has made this country great.

STATEMENT OF GEORGE WHORTON, OWNER OF THE INDEPENDENT ENTERPRISE NEWSPAPER, PAYETTE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am opposed to the construction of a dam at Hells Canyon by the Government for three reasons:

1. I do not believe it is the place of government to become engaged in any business. Its functions should be limited to those which cannot be accomplished by private enterprise.

2. Private enterprise can and is willing to develop the Hells Canyon stretch of the Snake River. There is no excuse for spending hundreds of millions of tax dollars to advance this socialistic scheme.

3. The Federal Power Commission has been established by Congress to make a thorough, technical study of such applications as have been filed by Idaho Power Co. for the full development of Hells Canyon. The Federal Power Commission staff has already recommended that licenses be granted to the company because its plan is best in the public interest. We should abide by the decision of the Federal Power Commission when it is made, and put an end to the constant delays that have deprived power users of orderly and timely development of the canyon.

I believe in the least Government and the least Federal expense possible. A quarter of a century ago, we would have thought it utterly impossible for Government to become engaged in business as extensively as it is today, creating an additional heavy drain on the taxpayer and moving toward a socialistic economy. TVA, years ago, was announced as a flood-control project. Sponsors then didn't dare admit that Government was starting to go into business in a big way, in unfair competition with private enterprise. Today, we see this thing for what it is—a public power dynasty, which has spread to other parts of the Nation and from hydro power to steam—a bureaucracy feeding on the taxpayers' money.

To me, this is foreign to the traditionally sound American way of government and business.

Private enterprise can do the job in Hells Canyon, and be productive of tax revenues to local, State, and Federal Governments. It can do the job sooner, cheaper, and better—without expense to taxpayers. The proposal for a Federal dam at Hells Canyon is a political proposal, backed by the same sponsors who have promoted the formation of a Columbia Valley Authority. Idaho citizens have demonstrated time and again they want no part of either.

STATEMENT OF FIRST SECURITY BANK OF IDAHO, ST. ANTHONY BRANCH, ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I should like to go on record opposing the Hells Canyon project for the following reasons:

1. Water is a natural resource of Idaho and I feel we should supervise the allocation of the water rights here.

2. The upper streams should utilize all the water they can before projects for the lower streams should come into existence.

3. I think we should develop our own resources before developing the resources for another State.

4. We have the soil and water. Let's use them for our own people.

5. We in this area do not wish to lose control of our own water.

LANE L. WILCKEN, *Manager.*

STATEMENT OF WILFORD IRRIGATION & MANUFACTURING CO., ST. ANTHONY, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

We, the directors of the Wilford Irrigation & Manufacturing Co., after considerable study, wish to express our unalterable opposition to the bill which provides for the erection of a Federal dam at Hells Canyon. We wish to reaffirm the statements made in resolution No. 11, passed in the annual water meeting of district 36, held at Idaho Falls, Idaho, March 7, 1955, which sets forth our reasons for such opposition.

HENRY TRUPP, Sr., *President.*
L. ERIC JOHNSON, *Secretary.*
HENRY L. BAUER, *Director.*
E. A. RELZTRAUPT, *Director.*
T. L. BEECH, *Director.*

STATEMENT OF JACK WOODMANSEE, OF BOISE, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I have been a resident of Idaho for the past 10 years and earlier in my life I was an architect on construction of the Bonneville Dam. I have worked in engineering and architectural work practically all of life and I am very much opposed to the Federal Government building a high dam at Hells Canyon.

I also am opposed to the Government in business due to the fact that they are not nearly as economical as private enterprise. I favor private enterprise developing all of the natural resources in the area.

STATEMENT OF H. B. YEARSLEY, OF POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

As a citizen and property owner in the State of Idaho, I feel sure that the best interests of this State would be by having private enterprise develop the three low dams in the Snake River, and forget the high Hells Canyon Dam, as proposed by some of our more vociferous people.

It is my firm opinion that the noise made by Hells Canyon Gracie Pfost is not representative of the majority of the people in Idaho, nor in the West. We are no longer to be fooled by the prospects of low-power cost subsidized by the Government.

Those of us in the West who have seen what private enterprise can do, feel that private enterprise is still capable of carrying the business load of the State of Idaho and the West. None of us ever got anything for nothing and low-cost power isn't any exception. Personally, I'm awfully tired of putting up with Government-subsidized competition to business, tax-exempt organizations, and increased taxes on legitimate corporations and individuals.

STATEMENT OF ED SIMMERMAN OF CALDWELL, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am opposed to Hells Canyon Dam legislation, because private enterprise should be accorded opportunity to develop such projects under authorization of the Federal Power Commission. By doing so taxes would be paid by private enterprise and the Federal Government would not have to spend tax funds for a project that can be sponsored by private enterprise.

STATEMENT BY ROBERT W. SAWYER, BEND, DESCHUTES COUNTY, OREG., FOR PRESENTATION TO HOUSE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

My name is Robert W. Sawyer. I have been a resident of Bend, Deschutes County, Oreg., for over 40 years. In that time for over 35 years I was editor and publisher of the Bend Bulletin, a daily newspaper. I have been county judge of Deschutes County, president of the Oregon Reclamation Congress and director and president of the National Reclamation Association. I make this statement as a citizen and taxpayer.

The bill, H. R. 4730, the subject of this hearing, is—except for one clause—virtually the same as bill H. R. 5743 of the 82d Congress. On that bill there were hearings on 9 days in the spring of 1952—3 years ago—by a subcommittee of the Committee on Interior and Insular Affairs. After those 9 days and the introduction of 886 pages of testimony and exhibits the bill was indefinitely postponed. The vote for postponement was by 12 Democrats and 9 Republicans, the full membership of the subcommittee.

I urge similar treatment of this similar bill by this similar House committee. The reasons for the House committee action are as cogent and compelling today as they were in 1952.

It is agreed on all sides that there is urgent need for additional electric generating capacity in the Pacific Northwest. Each year the need becomes more urgent. The Snake River in its 100 miles above the Hells Canyon site can contribute to that need in either of 2 ways. One is by construction of the project proposed to be authorized by H. R. 4730. The other is by the construction of the 3-dam project, Hells Canyon, Brownlee, and Oxbow by Idaho Power Co., whose application for license is now pending before the Federal Power Commission.

Competent contractors have testified to their ability to complete the 3-dam project in 38 months. Given the go-ahead signal by, say, January 1, 1956, they could have the three plants in operation by the Idaho Power Co. by March 1, 1959. In comparison no assurance can be given by anybody as to the date when power from a Federal Hells Canyon plant can go on the line. A Bureau of Reclamation engineer has testified that construction will begin on April 1 of the first fiscal year and be completed by the end of the seventh fiscal year meaning, of course, as to the beginning year, the first fiscal year after the first appropriation had been made available. The appropriation, however, would necessarily be preceded by an authorization. Bearing those facts in mind let us look at a timetable.

The Federal Government is now operating in fiscal 1955 and the Congress is making appropriations for fiscal 1956. Even were Hells Canyon appropriations authorized in the current 84th Congress, the appropriations would not be made until its second session or, more likely, the first session of the 85th for fiscal 1957, and thus, on the testimony of the Bureau engineer, we find that construction would not begin until April 1, 1957, nor be finished until June 30, 1964.

The engineer's statement was based on several assumptions, but none related to the uncertainty of congressional appropriations, both in time and amount. This uncertainty justifies the addition of at least a year or two to the estimated Federal construction period, but let the timetable stand as based on the engineer's figures plus obvious facts. The calculation shows that while the Idaho company power could be on the line in 1959 it would be not until 5 years later, or in 1964, that Hells Canyon would be delivering its power.

Those 5 years until 1964 would be 5 years of denial to the Pacific Northwest of power that under the Idaho Power Co. proposal it might be enjoying in 1959. Nor would the denial be to the Pacific Northwest alone. Power is needed for the national defense, and one of the stated purposes of S. 1333 is to supply that power. Are defense needs to be denied for a long 5 years?

Nor is this 5-year denial of power all that is implicit in this bill by way of jeopardy to the region and the Nation. I have said that there is one clause of the bill not found in H. R. 5743 rejected by the House committee. This is section 3 (c), wherein there is provision for a draft from the McNary Dam of the power necessary for the Hells Canyon construction. The draft would be

from a supply already inadequate for the region's needs. It would be a draft of possibly as much as 50 million kilowatt-hours a year for as many as 7 and more likely 10 years.

Today, on April 6, 1955, users of power in the region are having to accept cutbacks in their allocation because of an inadequate supply. The condition is a recurring one. The draft from McNary proposed for Hells Canyon construction would force greater cutbacks and the blighting of industrial development otherwise possible.

Technical testimony, it has been announced, is not wanted at this time. I shall not, therefore, undertake to discuss the costs of the Federal Hells Canyon project as compared with the Idaho Power Co.'s undertaking. I would have it noted, however, that the Idaho company has presented a firm commitment to have its projects completed at a cost under $140 million, while the Federal costs, not including Scriver Creek facilities, are in excess of $350 million. Moreover, they are cost figures of a half decade ago and from a Bureau which at that time was notoriously guilty of underestimating construction costs.

So that I may not be charged with a failure to tell the whole story, I include here the fact that the Federal project would produce at the site some 15,000 more kilowatts than would the Idaho powerplants. The much greater cost of Hells Canyon, however, would make those kilowatts expensive, indeed.

In the matter of project costs, I note with protest the failure of the Bureau of Reclamation to include the cost of interest during construction. Such interest is included by choice in the cost of works done by the Corps of Engineers and necessarily by private enterprise. The practice of the Bureau in this regard avoids full disclosure of a project cost, means the presentation of untrue cost figures, and is a deception practiced on the taxpayers.

Will this committee secure an estimate of what that interest cost would be?

While no land would be irrigated by water from a Hells Canyon Dam, it is contemplated under H. R. 4730 that revenues from the project would provide financial assistance to Federal reclamation projects "in accordance with the provisions of the Federal reclamation laws." Those laws, as now interpreted, would permit the use of the interest component of the power rates as a part of that financial assistance. This use has been thoroughly discredited by the Bureau of the Budget, by various congressional committees, and, where understood, by the general public. The use places an improper and unfair burden on the taxpayer. I protest the approval of any measure which contemplates the use of the interest component. Such use is a hidden subsidy and a fraud on the taxpayer. It should not be condoned by this or any other committee.

The western abutment of the Hells Canyon Dam would be in Oregon, in Wallowa County. The western abutments of the Brownlee and the Oxbow Dams would be in Oregon, in Baker County. Built by the Idaho Power Co., an apportioned value of these dams would be charged with county and school district tax rates and thus contribute to the financial well-being of the two counties. No payments of either sort would be made to these interests from a Federal Hells Canyon Dam.

I have shown that the Federal Hells Canyon undertaking would for too many years deprive the Northwest region of badly needed electric power, it would impose on the taxpayers of the Nation an obvious burden of hundreds of millions of dollars and an undisclosed further burden of tens of millions more, all avoidable if Idaho Power builds its projects.

On June 18, 1952, the day on which that House subcommittee of a Democratic Congress voted unanimously to postpone indefinitely the Hells Canyon bill of H. R. 5743 the gross public debt of the United States was $259,578,835,362. On July 5, last Tuesday, the day for which, as this is written, the latest figures were available, the gross debt was $274,467,337,640.26. H. R. 4730 proposes the addition of costs that will run toward another billion. It would be an unnecessary cost and should not be undertaken.

The national interest demands the reduction of debt rather than the addition of such an amount as would be involved in the development of the Federal Hells Canyon project proposed by H. R. 4730.

I think it proper to add that I have no financial interest in the Idaho Power Co. nor any other Northwest electric utility.

STATEMENT OF PERRY A. NELSON, OWNER, WESTERN REAL ESTATE CO., OF POCATELLO, IDAHO, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I wish to express my opposition to the construction of the high dam at Hells Canyon by the Federal Government. It is my belief that except in instances where private industry cannot or will not supply the requirements of our economy, the Federal Government should keep entirely divorced from competing with private industry. To do otherwise strikes at the very heart of our free-enterprise system.

It appears to me that the efforts on behalf of Hells Canyon are primarily agitated by persons and organizations who show a distinct preference to Federal control of other basic industry as well.

The cost of Hells Canyon Dam has been estimated at over a half billion dollars. This money comes from the people. The dams contemplated by private industry cost the taxpayers nothing but instead will return to this State millions of dollars in tax revenue.

Certainly we need more power in Idaho and we need it now. The Idaho Power Co. has served this area well. They stand ready to construct these low-head dams to supply our expanding industries. I have been given to understand that they would probably be under construction on some of these sites at this very moment if it were not for the delaying tactics of the public power advocates.

From the best information I can obtain, the high dam would flood out these upper river sites. It is my understanding that there are downriver locations which have considerable merit for dams of the Hells Canyon type. If power is required on the Pacific coast and private industry cannot supply it, why not use these downstream sites and for heaven's sake, don't ruin our Gem State power locations just to satisfy a philosophy, which if carried to its ultimate conclusion, would result in the destruction of our system of government.

STATEMENT OF CARL D. IRWIN, PRESIDENT PRO TEMPORE, IDAHO STATE SENATE, AND SENATOR FROM TWIN FALLS COUNTY, KIMBERLY, IDAHO; PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

My first and basic objection to the building of a high Federal dam at Hells Canyon, is that the instant that the dam is completed, we know that the first function of the Snake River will be to fill that reservoir each and every year.

We know that the Federal Constitution provides the Federal Government with the authority to make that demand if necessary and it would be necessary.

That means that all present and future users of water from the Snake River would be changed from first priority to second priority and that, in spite of and contrary to our Idaho laws.

My second objection is that since the floodwaters of the Snake River are already under control or in final completion of control through reservoirs, the need for flood control is meaningless as far as the Snake River is concerned.

Therefore, if it is necessary to have a high dam, why not build it where it could pick up and control floodwaters from other streams that are a menace and need control and store water that no one has been able to put to use?

That method would provide both flood control plus electric energy plus the electric energy provided by private power at Hells Canyon.

My other reasons are that I think it morally and economically wrong, under existing circumstances, to in any way hamper or jeopardize the full development of an agricultural empire that is second to none in the world. It has proven itself in 50 years of development.

It is presently developing the use of underground water for irrigation that has previously contributed to the flow of the river. This amounts to more than 400,000 acres and vast areas yet to be developed. Without water this is worthless desert land.

Any unused water would still be utilized wherever the dam was built below Hells Canyon.

I believe the whole proposition is a fight between Federal power advocates and private power and that in this instance, if the Federal power advocates win, it will be completely at the expense of the taxpayer and future growth of southeastern Idaho.

(COMMITTEE NOTE.—The following letters to Congressman Coon are inserted pursuant to his request of the committee chairman and the unanimous consent request previously adopted to permit any Member of Congress to insert a statement and material in the record:)

HOUSE OF REPRESENTATIVES,
Washington, D. C., July 14, 1955.

Hon. CLAIR ENGLE,
Committee on Interior and Insular Affairs,
House Office Building, Washington, D. C.

DEAR CLAIR: I am enclosing herewith correspondence which I have received relating to the Hells Canyon project which is before your committee.

Will you kindly insert this material in the records and make it a part of the hearings on this subject?

With personal regards, I am

Sincerely,

SAM COON.

RICHLAND, OREG., *June 9, 1955.*

Representative SAM COON,
United States House of Representatives,
Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955 hearing in Boiso, Idaho, on S. 1333.

Will you please see that a copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced.

I wish to restate my firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that my position is made of positive record wherever the subject may come up.

Respectfully yours,

HARRY N. HEWITT, *Eagle Valley Drug Co.*

STATEMENT OF HARRY N. HEWITT, EAGLE VALLEY DRUG CO., RICHLAND, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I should like to express my opinion relative to the development of Snake River Canyon as a power potential.

The Idaho Power Co. is more interested in producing power in Snake River Canyon than the Government insamuch as this is their life's work and their energies and ability are directed to that end and is so manifested in the type of men they have working for them; they being on a competitive basis and efficiency they produce a higher type of work, and this is shown in the interest they take in community projects into the districts they are connected with.

For 30 years I have been in the drug business in the shadow of Snake River Canyon and I have watched the Idaho Power Co. establish power connections in two valleys in eastern Oregon and have also witnessed the development that followed, from backward valleys to an almost immediate forward movement; they have done a wonderful job and, given the authority, they will do more for this eastern Oregon country; in the past few years this company's progress has been held up by politicians who would destroy the economy of the country in order to benefit themselves, and we taxpayers in eastern Oregon are the ones that have to pay. We need taxable property, and a private power dam is a very good start.

The Federal Power Commission should be granted enough time to study and weigh the facts on both sides of the case by men who are qualified in hydroelectric engineering to render a fair and justified decision.

HALF WAY, OREG., *June 9, 1955.*

REPRESENTATIVE SAM COON,
United States House of Representatives,
Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955 hearing in Boise, Idaho, on S. 1333.

Will yon please see that a copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced?

I wish to restate my firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that my position is made of positive record wherever the subject may come up.

Respectfully yours,

WILLIAM OLIVER, *Farmer.*

STATEMENT OF WILLIAM OLIVER, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am a registered Democrat and a property owner in the Pine Valley area, which is located some 35 miles from the proposed Hells Canyon site. I am also a past grange master, president of the Farm Bureau, have served on both elementary and high school boards, at present am serving at supervisor in the soil conservation district, and am president of the 4–H Leaders Association.

I have studier the arguments and past legislation of the sponsors of the high dam at Hells Canyon with much interest and concern. I have also examined the newly proposed Hells Canyon bill. I have examined the Idaho Power Co.'s plans, and have studied their testimony for three dams in the same area.

I am submitting the following reasons why I am opposed to any legislative proposal to construct a high dam at Hells Canyon by the Federal Government.

1. Idaho Power Co., a public utility, interested only in the production of electrical power, is better qualified to determine the economic potential of Snake River than any group of engineers working under political appointment.

2. The Idaho Power Co. program will provide immediate and substantial contribution to Pacific Northwest Power requirements.

3. Idaho Power Co. is ready and willing to commence immediate construction on their three-dam plan.

4. Idaho Power Co.'s proposed three dams will substantially increase their tax payments.

5. The constructoin of a Federal high dam at Hells Canyon can only increase the already very high public tax burden.

6. Any legislation at this time will delay development of much needed electrical power in the Northwest. As of this date the interruptible power supply of the Northwest has been cut 75 percent, due to winter peak demands and low streamflow.

7. The Federal Power Commission should be allowed ample time to render a decision on the pending Idaho Power Co. applications before any new legislation is submitted to Congress.

8. That the money needed to construct a Federal high dam would be more wisely spent in national defense, and our governmental brain power more wisely used in the interest of national defense, our foreign policy, and the eradication or protection of squirrels on the White House lawn.

HALFWAY, OREG., *June 9, 1955.*

Representative SAM COON,
United States House of Representatives,
Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955 hearing in Boise, Idaho, on S. 1333.

Will you please see that a copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced.

I wish to restate my firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that my position is made of positive record wherever the subject may come up.

Respectfully yours,

W. W. EVANS,
President, First National Bank of Halfway.

STATEMENT OF W. W. EVANS, PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS, IN BOISE, IDAHO, APRIL 4, 1955

We look upon these present hearings in connection with the Hells Canyon controversy as a smokescreen to confuse the issue. This controversy ig given credit for the political upset here in Oregon last November, as though this vote was a mandate of the people for the construction of the Federal high dam, when in reality the politicians most involved know better.

According to the engineers' findings, the series of 3 low dams proposed by the Idaho Power Co. can be constructed for approximately one-third of the cost of the Federal high dam, and will produce to within approximately 15,000 kilowatts of the high dam's potential. The glamor of the high dam is not worth this difference to the taxpayers who have to carry the burden, and if there ever was a time when Uncle Sam should curtail expenses it is now.

The recreational advantage of the Federal high dam will not be increased or diminished by the series of low-head dams, and there are no irrigational possibilities in either project. All of this talk about transportation is rubbish to those of us who live nearby and know the facts as they are.

We were clerk of our local high school whose district comprising the territory served by the First National Bank of Halfway, and including the Ox Bow section of the Snake River, and we remember the upset to the school budget when the Union Pacific Railway abandoned the track from Robinette to Homestead. Undoubtedly the construction of the Ox Bow powerplant in this district will shift the tax burdens to other shoulders, which relief our farmers sorely need.

We have watched the Idaho Power Co. in operation for 30 years as an officer of the First National Bank of Halfway. We know many of their officers and employees personally, and we have yet to hear of any act unworthy of the complete confidence of any honest upright citizen in the territory they serve. We have long since concluded, that in their hands, is a good, safe place to confide our natural resources.

Why not junk all of this prejudice and political chicanery, and go ahead with the FPC decision on the merits of the year-long hearing. Undoubtedly the records of this hearing unfold a clear picture of the findings of those competent to judge the merits of both propositions.

JUNE 17, 1955.

Representative SAM COON,
United States House of Representatives, Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955 hearing in Boise, Idaho, on S. 1333.

Will you please see that a copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced?

I wish to restate my firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that my position is made of positive record wherever the subject may come up.

Respectfully yours,

J. D. BENNETT.

67129—56——33

ONTARIO GRAIN CO.,
Ontario, Oreg., April 2, 1955.

Re Boise, Idaho, hearing.

Hon. Senator JAMES E. MURRAY,
Chairman, Interior and Insular Affairs Committee,
United States Senate Building, Washington, D. C.

DEAR SIR: I do not believe that a high dam in Hells Canyon should be built for the following reasons:

1. Will not give maximum development to the Snake River Basin.
2. Will not provide flood control for the basin.
3. Storage dams should be built upstream, so that full use of the water can be had, for irrigation, fish and wildlife, domestic, sanitary, industrial, power, and navigation development, recreation, and all the many other uses, instead of being stored low down, on the main stem for limited use.
4. Believe low-head power dams in the lower river to be most economical and best for basinwide development of this area.
5. Think all development should be studied out on an overall basin basis, giving full consideration to the maximum benefits to the Snake River Basin, and the residents of the area.
6. Believe that your committee would do well to seek the answers to all our problems, along with power development. Suggest if you want the information that you request an overall basin study be made and that either the Bureau of Reclamation or the Army engineers, or both, be assigned the task of a comprehensive report covering all the phases of development required on a long-range basis.

Yours truly,

J. D. BENNETT.

NYSSA, OREG., *June 15, 1955.*

Representative SAM COON,
House of Representatives, Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955 hearing in Boise, Idaho, on S. 1333.

Will you please see that copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced.

We wish to restate our firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that our position is made of positive record wherever the subject may come up.

Respectfully yours,

MRS. FRANK MORGAN.

STATEMENT OF MRS. FRANK MORGAN, NYSSA, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

Under a system of private enterprise and individual initiative, our country has grown great and prosperous. Therefore, I feel that when a reputable company is willing and anxious to build the proposed dams, the Government's role should be largely one of supervision.

ROBINETTE, OREG., *June 9, 1955.*

Representative SAM COON,
House of Representatives, Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955, hearing in Boise, Idaho, on S. 1333.

Will you please see that a copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced.

I wish to restate my firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that my position is made of positive record wherever the subject may come up.

Respectfully yours,

C. E. MILLER,
ROBINETTE FORWARDING CO.

STATEMENT OF C. E. MILLER, ROBINETTE, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, APRIL 4, 1955

I am vitally interested in the orderly development of the electrical power potential of the upper Snake River Canyon on a sound economical basis.

Assuming that the need for electrical energy is great, as currently stated, for the continued growth of the Northwest and intermountain areas. I favor carrying out the program of awaiting the decision of the Federal Power Commission based on the extended hearings lately completed for the following reasons:

1. The development of the upper portion of the Snake River Canyon under the utilities plan would develop the full economics of this section of the river.
2. The 3-dam program has been proven feasible and at a favorable cost ratio.
3. The development of the river by a taxpaying utility would be an assistance to our National and State economics instead of an added burden at all levels for years to come.
4. The Idaho Power Co. and their associates have proven ability to efficiently finance and construct the installations and place or bring them into production years ahead of the more costly Federal dam at the Hells Canyon site.

Further, I am opposed to the introduction of any legislation in the Congress of the United States relative to the Hells Canyon Dam until a decision on the issue has been handed down by the Federal Power Commission.

I have lived in the Snake River Canyon area under consideration and operated a business furnishing supplies and services to the general public for the past 37 years.

NYSSA, OREG., *June 15, 1955.*

Representative SAM COON,
House of Representatives, Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955, hearing in Boise, Idaho, on S. 1333.

Will you please see that copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced.

We wish to restate our firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that our position is made of positive record wherever the subject may come up.

Respectfully yours,

CLIFFORD MAIN.

STATEMENT OF CLIFFORD S. MAIN, NYSSA, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS IN BOISE, IDAHO, ON APRIL 4, 1955

It seems incredible to me to believe that there have been those bills introduced in Congress to direct the Federal Government to build a high dam at Hells Canyon at this time. Surely our Congress has respect for the Federal Power Commission who have held hearings over this area and have made a thorough study of this matter of whether it is most feasible for the Government to build a dam or to let private industry develop this site, and are in the process of rendering a decision on this matter. We believe there should be no action from committees on such a bill until this agency has rendered its decision, and we believe this agency should be pressed for its decision soon. It is obvious that this action by Hells Canyon sponsors is a political maneuver to forestall any decisions on this matter indefinitely.

In all fairness to the Federal Power Commission and to private industry we must wait for this decision from the Federal Power Commission, which agency has been established by law to handle such matters and whose decisions are based on sound engineering and technical facts.

These present hearings, the balance of them scheduled for Pasco, Lewiston, and Portland, are far from the areas most affected by such a dam and do not give the upper Snake River Valley fair consideration. Therefore, it is our sincere opinion that the Federal Power Commission is capable of giving a fair and unbiased opinion on this matter and that we should consider their decision as to which is the most feasible way to develop this site and to the best interest of the people and the area affected.

JUNE 13, 1955.

Representative SAM COON,
United States House of Representatives,
Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955 hearing in Boise, Idaho, on S. 1333.

Will you please see that a copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced.

I wish to restate my firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that my position is made of positive record wherever the subject may come up.

Respectfully yours,

HOP.

APRIL 1, 1955.

JAMES E. MURRAY,
Chairman, Senate Interior and Insular Affairs Committee,
Senate Office Building, Washington, D. C.

DEAR SENATOR: Sorry I can't be present to make the following statement before your Hells Canyon hearing in Boise Monday, April 4.

Proposals for a Federal dam at Hells Canyon have been before the people of this area many times. Many hearings have already been held with adverse results. There are some aggressive individuals for the high dam, but look at the record and you'll see the majority are opposed. Time and time again, the people of Idaho have voted down a Hells Canyon advocate. Al Ulman's most talked about item in his plank was Hells Canyon and he lost by a comforting margin. PUD's have been voted down in Malheur County several different times.

Your kind keep reaching out for more jurisdiction over power, communications, transportation, education, health, etc. You should realize by now the American people don't want more Government controls saddled on them.

Senator Morse and others are credited with statements that Hells Canyon is imperative for flood control. They forget that the original bill called for less than 5-percent construction costs for flood control. About once in 100 years has there been high water in the upper Snake. Your rampaging torrents have been the Salmon and Clearwater Rivers. The upper tributaries are contributing less water with each passing year—with the sane practice of constructing more storage dams on these headwaters, there will be appreciably less water for downstream delivery. The flood angle is out.

A recent hearing before the Federal Power Commission answered all conceivable questions regarding the best procedure, to build 3 low dams or 1 high dam. It was held up repeatedly by delaying tactics of Hells Canyon supporters. They evidently conceived that their arguments were not realistic enough to be convincing. Consequently, a new Hells Canyon bill has been introduced and a series of hearings scheduled in the grassroots areas, Lewiston, Pasco, and Portland, known as hotbeds for the high dam—interested in subsidized power.

Due to Idaho pressure, you allowed a 3-hour farce at Boise—time enough to introduce the brass and explain your position. It will prove just another wasteful junta at taxpayers' expense.

There will be dozens of organizations and individuals to testify for and against the high dam. You can consider this letter as a protest against further bickering. Just let the Federal Power Commission make their ruling. I am opposed to more public power, but if the Commission rules it that way, I'll abide by their decision. In conclusion, quit dragging your feet.

Sincerely,

H. F. LOGUE.

JUNE 11, 1955.

Representative SAM COON,
United States House of Representatives,
Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955 hearing in Boise, Idaho, on S. 1333.

Will you please see that a copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced.

I wish to restate my firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that our position is made of positive record wherever the subject may come up.

Respectfully yours,

RAY DUNCAN.

STATEMENT OF RAY DUNCAN, OF ONTARIO, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

In regard to the Hells Canyon controversy, its supporters contend for one thing, that it is essential as a flood-control measure. This is absurd since most of the upper Snake River tributary flood waters are being stored at the present time for irrigation purposes and there is still more of that kind of development planned, so the filling of the Hells Canyon dam is problemetical.

Development of power by private companies can furnish power in 2 or 3 years while the Hells Canyon Dam will not give any power in less than 10 years. Then, too, the private utility development would all be taken care of by private capital and in turn, the private company would pay taxes instead of having the taxpayers build and support them, as would be the case if the Federal Government builds Hells Canyon.

As to the amount of power that would be developed by either party, there would be very little difference.

The majority of the people in Oregon are decidedly against the Hells Canyon project which was clearly shown in the campaign of Al Ullman against Sam Coon. Ullman was defeated by a very substantial majority as was Earl Newbry for Governor, the Republican primary, as was Joe Carson the Democratic nominee for Governor. Each of these were using the Hells Canyon as a vote-getting issue.

PUD elections have failed here several times. The main part of the people in this State who favor Hells Canyon are the ones who are extreme liberalists. To me, this isn't an issue that takes the country's economy into consideration, but just one more step toward a complete monopoly of all Northwest power, whereas if this development were made by private utilities, they would be under strict regulation by existing Government and State agencies.

Why can't we keep our country they way we now know it so our kids and their kids may know the job of living where they please, doing what they want to do, and worshipping God as they see fit. In other words, let's let our Federal Power Commission decide the issue on the evidence already in their hands, and then let us abide by their decision.

JUNE 14, 1955.

Representative SAM COON,
United States House of Representatives,
Washington, D. C.

DEAR REPRESENTATIVE COON: Enclosed is a copy of a statement which I introduced into the record of the Senate Interior and Insular Affairs Committee at its April 1955 hearing in Boise, Idaho, in S. 1333.

Will you please see that a copy of this same statement is introduced in any forthcoming hearings of the House Interior and Insular Affairs Committee on any of the Federal Hells Canyon bills that have been introduced.

I wish to restate my firm opposition to any Federal Hells Canyon project and will certainly appreciate your cooperation in making certain that our position is made of positive record wherever the subject may come up.

Respectfully yours,

MRS. ERMA STAPLES.

STATEMENT OF MRS. ERMA STAPLES, OF ONTARIO, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

In regard to the building of Hells Canyon Dam, I am positively not in favor of the Government building this dam.

Furthermore, I am not in favor of the Government building any project that private enterprise wants to build.

I am a firm believer of private enterprise and not Government ownership.

RICHLAND, OREG., *June 10, 1955.*

Hon. SAM COON,
Representative, United States House of Representatives,
Washington, D. C.

DEAR SAM: I wish to take this opportunity to express my firm and determined opposition to any Federal Hells Canyon project. I have resided in Eagle Valley for over 50 years. For many years I have served on our local school boards and the soil conservation district.

I feel that the whole Hells Canyon issue has been made a political issue on the part of the proponents of the Federal Hells Canyon project. It is not and never should be a political issue.

Idaho Power Co. has consistently served this part of the country most efficiently in the past years and at an economical rate. I favor their three low-dams program. They are so situated that they can build them efficiently and economically. The three low dams will furnish the power necessary and bring added revenue into the territory. It would also bring revenue into this territory in the form of taxes.

Again, I want to make it clear that I am firmly and unalterably opposed to any Federal Hells Canyon project and I shall appreciate it if you will make it known of record wherever and whenever the subject may come up.

Sincerely,

JOHN H. SASS.

DURKEE, OREG., *June 20, 1955.*

Representative SAM COON,
United States House of Representatives,
Washington, D. C.

DEAR REPRESENTATIVE COON: I am enclosing a copy of the statement which I had introduced into the records of the Senate Interior and Insular Affairs Committee at its April hearing in Boise, Idaho. Will you please introduce the enclosed copy of the same statement in any forthcoming hearings of the House Interior and Insular Affairs Committee on any Federal Hells Canyon bill?

I would like to again state my opposition to a Federal Hells Canyon project and would like your cooperation in making certain that my position is made a record at any Hells Canyon hearing.

Thank you for your cooperation.

Very truly yours,

R. D. (DARREL) SMITH.

STATEMENT OF R. D. SMITH, DURKEE, OREG., PRESENTED TO THE SUBCOMMITTEE OF THE SENATE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS AT BOISE, IDAHO, APRIL 4, 1955

I am a rancher in Baker County, Oreg.

I believe in private enterprise and that our local power company should develop the power sites in the Hells Canyon area.

Our State is in need of additional valuation to help relieve our tax burden.

The United States was founded on private enterprise, and thus, has become the greatest Nation in the world.

I am aware that the Federal Power Commission has all the facts; let's leave it up to them to make the decision.

INDEX

A

Page

Adams, William E., master, Idaho State Grange, Eagle, Idaho, statement presented to the subcommittee of the Senate Committee on Interior and Insular Affairs in Boise, Idaho, April 4, 1955 ---- 306

B

Biemiller, Andrew J., member national legislative committee, American Federation of Labor, statement submitted for the record ---- 150
Bow, Frank T., Representative, statement in opposition to H. R. 4719 ---- 10
Budge, Hamer H., Representative, Library of Congress report dated March 23, 1954, on Protection of Present and Future Diversions in Construction of Flood Control and Power on Navigable Rivers ---- 188
Buffalo, N. Y., Chamber of Commerce, statement submitted for the record ---- 405

C

Calvin, Frank N., manager, fertilizer department, Farmers Union Central Exchange, Inc., South St. Paul, Minn., statement submitted for the record ---- 222
Campbell, Wallace J., director, Washington Office of the Cooperative League of the U. S. A., statement submitted for the record ---- 139
Champ, F. P., member of the national resources committee, United States Chamber of Commerce, statement submitted for the record ---- 403
Coon, Sam, Representative, letter of July 14, 1955, to Chairman Engle, with enclosures ---- 507
Cooper, Fred M., president, Idaho State Reclamation Association, Grace, Idaho, letter of June 15, 1955, to Representative Hamer Budge and statement submitted for the record ---- 309
Crandall, Lynn, district engineer, United States Geological Survey, Idaho Falls, Idaho, and Snake River watermaster, Idaho State Department of Reclamation, statement submitted for the record: Future Upstream Depletion Above Hells Canyon ---- 34

E

Emerine, Edward, Boise, Idaho, publisher of the Idaho Farm Journal and the Boise Journal, statement submitted for the record ---- 158

F

Fain, Charles J., assistant general manager, National Rural Electric Cooperative Association, statement submitted for the record ---- 144
Fretwell, Sam, statement submitted for the record ---- 120

G

Graham, Guy, Fruitland, Idaho, statement submitted for the record ---- 178

H

H. R. 4719, a bill to authorize the construction, operation and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes ---- 1
H. R. 4730, a bill to authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes ---- 2

Page

H. R. 4739, a bill to authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes ... 3
H. R. 4740, a bill to authorize the construction, operation, and maintenance of the Hells Canyon Dam on the Snake River between Idaho and Oregon, and for related purposes ... 4
Hesselholt, Chriss, Castleford, Idaho, statement submitted for the record ... 180
Hoisington, C. I., Chief, Estimates and Analyses Branch, Department of the Interior, Bureau of Reclamation, statement submitted for the record: Statement of Specialties—Investigation, Design, and Estimating Cost of Hells Canyon Project ... 26
House Document No. 531, 81st Congress, excerpts from report of the division engineer ... 284
Houston, Holland H., consulting engineer, Olympia, Wash., statement submitted for the record ... 343
Huff, C. E., manager of the National Farmers Union Resources Corp., statement submitted for the record ... 218
Hungry Horse Dam:
  Increased cost data submitted by Representative John P. Saylor ... 90
  Statement of Representative Lee Metcalf re cost estimates ... 91
Hurd, Owen W., executive vice president, American Public Power Association, statement submitted for the record ... 138

I

Interior Department:
  Report of July 13, 1955, on H. R. 4719 to Hon. Clair Engle, chairman of the House Committee on Interior and Insular Affairs ... 247
  Report of May 2, 1955, on S. 1333 to Hon. James E. Murray, chairman of the Senate Committee on Interior and Insular Affairs ... 249

K

Knight, O. A., vice president, Congress of Industrial Organizations, statement submitted for the record ... 153

L

Langlie, Gov. Arthur B., State of Washington:
  Statement before Senate Committee on Interior and Insular Affairs ... 232
  Telegram dated July 12, 1955 ... 230

M

Magnuson, Don, Representative, statement in support of H. R. 4739 ... 9
McIntire, Elmer F., executive secretary of the Idaho State Federation of Labor, statement submitted for the record ... 123
Metcalf, Lee, Representative, statement submitted for the record ... 91
Moore, Carl C., Lewiston, Idaho, statement submitted for the record ... 137

N

Nelson, Harry, Twin Falls, Idaho, statement submitted for the record ... 177
Norwood, Gus, executive secretary, Northwest Public Power Association, Vancouver, Wash., statement submitted for the record ... 159

O

Ostrander, Earl D., Director of Administrative Management, Bonneville Power Administration, statement submitted for the record ... 41

P

Parry, R. P., attorney, Twin Falls, Idaho, statement submitted for the record ... 323
Patterson, Gov. Paul, State of Oregon:
  Statement before the Senate Interior and Insular Affairs Committee ... 240
  Telegram dated July 8, 1955 ... 230
Patton, James G., president of the National Farmers Union, statement submitted for the record ... 223

Peterson, C. Petrus, president, National Reclamation Association, Washington, D. C., statement submitted for the record — Page 318
Pfost, Gracie, Representative:
Library of Congress report dated February 16, 1955, on water rights — 198
Statement in support of Hells Canyon Dam — 6
Puls, L. G., engineer, commissioner's office, Denver, Colo., United States Department of the Interior, Bureau of Reclamation, statement submitted for the record: Basic Data and Information on Facilities Relating to the Proposed High Hells Canyon Dam and Powerplant on Snake River — 23

R

Resolutions and statements: [1]
Aberdeen Chamber of Commerce, Aberdeen, Idaho — 418
Aberdeen Local Farm Bureau, Aberdeen, Idaho — 417
Aberdeen-Springfield Canal Co., Aberdeen, Idaho — 417
Adams, William E., master, Idaho State Grange, Eagle, Idaho — 459
Alpha Grange 368, Cascade, Idaho — 418
American Falls Farm Bureau, American Falls, Idaho — 420
Ashton local of the Idaho Farm Bureau Federation, Ashton, Idaho — 421
Baldridge, John, electrician, Payette, Idaho — 421
Baty, John, master, Fairview Grange, Buhl, Idaho — 445
Baxter, George, Baxter & Co., Buhl, Idaho — 421
Beaverton, Oreg., Grange — 210
Bennett, Fred W., Mountain Home, Idaho — 422
Benson, Alvin B., Melba, Idaho — 422
Benton County Pomona Grange 26, Kennewick, Wash — 212
Bickmore, J. G., Pocatello, Idaho — 422
Bingham County Farm Bureau Board of Directors — 423
Bingham, E. Duane, Emmett, Idaho — 423
Bivens, Dave, farmer and stockman, Payette, Idaho — 441
Blackfoot Chamber of Commerce, Blackfoot, Idaho — 424
Blackhurst, J. B., manager, Bannock Title Abstract Co., Pocatello, Idaho — 424
Blackstock, Senator Adam H., State senator of Owyhee County, Marsing, Idaho — 425
Boise, Idaho, Chamber of Commerce — 425
Bolt, L. E., mayor, city of Emmett, Idaho — 426
Bowen, Calvin L., Boise, Idaho — 413
Boyer, Roy L., Gooding, Idaho — 426
Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express, and Station Employes, Washington, D. C — 212
Buhl Chamber of Commerce, Buhl, Idaho — 427
Burgess, Fred E., Vale, Oreg — 428
Burley Irrigation District, Burley, Idaho — 427
Burton, F. A., district manager, Pocatello Flour Mills, Pocatello, Idaho — 428
Calhoun, C., Buhl, Idaho — 429
Campbell, Mrs. Valda, Weiser, Idaho — 414
Canyonside Grange 126 — 430
Carlsen, Albert, Blackfoot, Idaho — 430
Carlton, Jack, Melba, Idaho — 431
Carlton, Neil H., Boise, Idaho — 439
Carlton, Ramon S., Carlton's Capitol Grocery, Boise, Idaho — 431
Carson, Wm. M., Weiser, Idaho — 431
Cascade, Idaho, Chamber of Commerce — 432
Cascade, Idaho, Junior Chamber of Commerce — 432
Case, Jasper, Glenns Ferry, Idaho — 432
Castleford Grange 424, Castleford, Idaho — 432
Cedar Draw Grange, Buhl, Idaho — 433
Central Lincoln People's Utility District, Newport, Oreg — 206
Central Trades and Labor Council, Kalispell, Mont — 213
Chamberlin, Tom, Chamberlin Implement Co., Weiser, Idaho — 433
Charity Grange 294, Grangeville, Idaho — 204
Chase, Chas. M., Nampa, Idaho — 440

[1] COMMITTEE NOTE.—These resolutions and statements were offered en bloc by Representative Pfost or Representative Budge at the request of the authors or organizations.

Resolutions and statements—Continued Page
Claar, M. C., secretary, Idaho Wool Growers Association, Boise, Idaho 414
Clark, Scott, Caldwell, Idaho 433
Clearwater, Idaho, Grange 299 203
Cluff, J. Verl, and wife, Meridian, Idaho 433
Coleman, Alex O., St. Anthony, Idaho 433
Collins, E. A., branch manager, Intermountain Equipment Co., Pocatello, Idaho 433
Comstock, Ralph J., Pocatello, Idaho 436
Conard, Mrs. J. C., Pocatello, Idaho 413
Cooper, Fred M., Grace, Idaho, president of the Idaho State Reclamation Association 436
Coos County Pomona Grange, Coquille, Oreg 210
Cordes, George, Boise, Idaho 439
Craigmont, Idaho, Grange 346 202
Cunningham, William R., president, St. Anthony, Idaho, Chamber of Commerce 439
Davidson, Mowbray, president, Peasley Transfer & Storage Co., Boise, Idaho 440
Davis, George B., Meridian, Idaho 440
Deal, Homer S., Boise, Idaho 440
Dickerson, Don, Weiser, Idaho 441
Dickover, D. M., Boise, Idaho 441
Dobbin, Dale A., Dobbin Implement Co., Marsing, Idaho 442
Doles, Mrs. Katherine, Nampa, Idaho 412
Dominick, T. A., Nampa, Idaho 412
Douglas, David M., Caldwell Electric Co., Caldwell, Idaho 442
Drake, W. S., president, Drake Plumbing Co., Boise, Idaho 442
Drew, C. B., Wilder, Idaho 443
Duncan, Ray, Ontario, Oreg 443
Dunn, Mrs. Sally V., Pocatello, Idaho 413
Egbert, K. M., Nampa, Idaho 412
El Dorado Grange 817, Ironside, Oreg 211
Ells, Mrs. Everett, Pocatello, Idaho 414
Emmett Irrigation District, Emmett, Idaho 443
Emmett Kiwanis Club, Emmett, Idaho 406
Evans, W. W., president, First National Bank of Halfway, Idaho 445
Falkner, Henry H., Boise, Idaho 446
Farmer Union, Local 429, Lewiston, Idaho 201
Ferdinand, Idaho, Grange 357 204
Fernhill Grange 592, Rainier, Oreg 210
Flandro, C. Ed., Pocatello, Idaho 446
Fletcher, Henry H., Pocatello, Idaho 446
Ford, Philip, Weiser, Idaho 447
Fremont-Madison Irrigation District 447
Frome, W. M., representative from Fremont County, Idaho, house of representatives, St. Anthony, Idaho 414
Gooding, Idaho, Chamber of Commerce 450
Gooding, Idaho, city of 409
Gooding, E. G., president, American Falls Reservoir District No. 2, Gooding, Idaho 420
Gooding Grange 138, Gooding, Idaho 451
Griffith, N. O., clerk, Gooding City Council, Gooding 451
Hansen, Gordon, Nampa, Idaho 411
Harwood, Ted, manager of Payette Lakes Lumber Co., McCall, Idaho 452
Heath, Tom, Preston, Idaho, senator from Franklin County, Idaho State Senate 452
Hewitt, Harry N., Eagle Valley Drug Co., Richland, Oreg 454
Hillsboro, Oreg., Grange 73 209
Hod Carriers, Construction, Building and Maintenance Laborers, Local 810, Twin Falls, Idaho 214
Howard, Robert S., publisher, Idaho State Journal, Pocatello, Idaho 454
Hulbe, Hans C., Boise, Idaho 455
Huntsinger, Carl, Kuna, Idaho 455
Hurst, Carroll M., mortgage broker, Nampa, Idaho 455
Idaho Farm Bureau Federation, Pocatello, Idaho 455

Resolutions and statements—Continued Page
Idaho-Lewis County Pomona Grange 206
Idaho Mining Association, Boise, Idaho 457
Idaho Potato Starch Co., Blackfoot, Idaho 407
Idaho Power Co., Boise, Idaho 457
Idaho State Chamber of Commerce, Boise, Idaho 461
Irwin, Carl D., president pro tempore, Idaho State Senate 463
Jackson, William A., senator, Gooding County, Idaho 462
Jensen, Grover W., New Sweden, Idaho 462
Jerome, Idaho, Chamber of Commerce 463
Jerome, Idaho, Kiwanis Club 465
Johnson, Albert S., Pocatello, Idaho 466
Johnson, L. C., Pocatello, Idaho 466
Johnson, Sterling E., Parma, Idaho 466
Kaufman, A. R., Twin Falls Tract farmer, Buhl, Idaho 467
Keating, Oreg., Grange 823 207
Kellogg Marsh Grange 136, Marysville, Wash. 211
Kesler, Mr. and Mrs. Clark L., Blackfoot, Idaho 467
Koch, Henry F., Boise, Idaho 467
LaTurner, E. E., representative from Jerome County, Idaho House of Representatives 468
Lee, Worth S., Mountain Home, Idaho 468
Lookingglass, Oreg., Grange 927 208
Loyd Canal Co., Blackfoot, Idaho 468
Lucerne Grange 189 468
Main, Clifford S., Nyssa, Oreg. 469
Mangum, R. W., Nampa, Idaho 412
Manser, Shirley H., Manser, Inc., Payette, Idaho 469
Mariposa Grange 140, Mountain Home, Idaho 205
Markham, H. B., Pocatello, Idaho 469
Martin Canal Co., Idaho Falls, Idaho 406
Masingill, T. L., electrical contractor and appliance dealer, Payette, Idaho 470
Matthews, H. H., Meridian, Idaho 470
McCarthy, Mrs. William, Pocatello, Idaho 470
McKinley Grange 582, Myrtle Point, Oreg. 209
Meadows, Vard W., representing the American Falls, Idaho, Chamber of Commerce 418
Meservy, O. K., secretary-manager, Farmers Friend Canal & Irrigation Co., St. Anthony, Idaho 473
Miller, A. G., D.D.S., St. Anthony, Idaho 473
Miller, C. E., Robinette, Oreg 473
Mills, H. Paul, Boise division manager, the Salt Lake City Hardware Co., Boise, Idaho 416
Minidoka-Cassia Counties Farmers Union, Rupert, Idaho 205
Minidoka Irrigation District, Rupert, Idaho 474
Missouri State Rural Electrification Association, Jefferson City, Mo. 216
Mountain Home Reclamation Committee of Mountain Home, Idaho 475
Mountain Rock Grange 370 477
Morgan, Mrs. Frank, Nyssa, Oreg 477
Murdock, State Senator Leo D., Bingham County 477
Murphy, Jack M., and Fred A. Schwartz, Shoshone, Idaho 478
Murtaugh Grange 256 478
Nampa, Idaho, Chamber of Commerce 451
Nelson, Perry A., owner, Western Real Estate Co., Pocatello, Idaho 506
Newberry, Ralph R., Jerome, Idaho 478
Nez Perce, Idaho, Idaho-Lewis County Pomona Grange 203
Oakes, Ed, Ontario, Oreg 480
Ohop Grange 812, Eatonville, Wash 211
Oliver, William 480
Ontario Heights Grange 917, Ontario, Oreg 217
Ophir, Oreg., Grange 767 209
Oswego Grange 175, Lake Grove, Oreg 211
O'Very, Mrs. Myrl C., Boise, Idaho 415
Perry, S. C., Meridian, Idaho 481
Pleasant Plains Grange 168 481
Plummer, Idaho, Grange 273 202

Resolutions and statements—Continued Page
Pocatello Chamber of Commerce, Pocatello, Idaho 481
Powell Butte, Oreg., Grange 629 208
Pride, P. S., manager, Boise-Payette Lumber Co., Kuna, Idaho 482
Reinke, Lester L., Twin Falls County Farm Bureau, Twin Falls, Idaho 496
Reynolds, R. P., Reynolds Motel, St. Anthony, Idaho 483
Riner, M. D., Caldwell, Idaho 484
Riversdale Grange 731, Douglas County, Oreg 207
Riverton Ditch Co., Bingham County, Idaho 484
Rock Creek Grange 395, Viola, Idaho 204
Rowland, Thomas B., Rowland Bros. Dairy, Pocatello, Idaho 484
Salt Lake Hardware Co., Boise, Idaho 485
Sawyer, Robert W., Bend, Oreg 504
Schmidt, Mrs. O. F., Boise, Idaho 485
Selders, Lester F., Pocatello, Idaho 485
Self, Kenneth G., Self Manufacturing Co., Twin Falls, Idaho 486
Sharp, N. V., chairman, Committee of Nine 486
Silbaugh, J. H., president, board of directors, North Side Canal Co 479
Simmerman, Ed, Caldwell, Idaho 503
Skalet-Erickson Co., St. Anthony, Idaho 408
Skalet, J. E., St. Anthony, Idaho 488
Smith, Dean C., Buhl Grange 214, Buhl, Idaho 489
Smith, J. Fred, mayor, City of Rexburg, Idaho 489
Smith, R. D., Durkee, Oreg 489
Smith, Reubel E., Boise Heating & Equipment Co., Boise, Idaho 416
Sommer, John, Twin Falls, Idaho 490
South Benton Grange 746, Junction City, Oreg 208
Sparks, V. V., Caldwell, Idaho 411
Squires, Gordon, editor and publisher, Cascade News, Cascade, Idaho 490
Stanford, Gene, Weiser, Idaho 490
Stedtfeld, Norman V., attorney at law, Pocatello, Idaho 490
Stockton, L. N., Jerome Grange 210, Jerome, Idaho 490
Stone, Joel, Caldwell Hide Co., Caldwell, Idaho 491
Storey, Don M., representing the Meridian, Idaho, Chamber of Commerce 472
Strait, W. J., Boise, Idaho 413
Stroebel, Marion, Meridian, Idaho 491
Stubblefield, Blaine, Weiser, Idaho 491
Sturdevant, F. C., president, Miller Bros. Co., St. Anthony, Idaho 414
Swendsen, Myron, joint owner and manager, Engineering Sales Service, Inc., Boise, Idaho 492
Tate, John P., commissioner, Ada County Drainage District No. 3, Boise, Idaho 494
Taylor, Cecil C., Boise, Idaho 415
Tensed, Idaho, Grange 293 205
Twin Falls Chamber of Commerce, Twin Falls, Idaho 495
Twin Falls County Pomona Grange 11 496
Twin Falls Grange 216 496
Twin Groves Canal & Irrigation Co., St. Anthony, Idaho 496
United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada:
Local 459, Missoula, Mont 212
Local 44, Spokane, Wash 214
Local 648, Pocatello, Idaho 216
United Brotherhood of Shipwrights, Ship Joiners and Boat Builders, Local Union 1184, Seattle, Wash 215
Utter, Lem, Appleton Grange 127 497
Van Atta, Mr. and Mrs. H. F., Blackfoot, Idaho 497
Van Slyke, D. A., Wilder, Idaho 497
Vassar, Emery L., Vassar Hatchery and Farm, Caldwell, Idaho 497
Vincent, E. D., American Falls Reservoir District No. 2, Gooding and Lincoln Counties 419
Wall, Ogle, North Side Pomona Grange 6 499
Walters, Stanley, resolutions committee, Filer Grange 215, Filer, Idaho 499
Wendell, Idaho, Chamber of Commerce 501

Resolutions and statements—Continued Page
Westland Grange 827, Hermiston, Oreg 208
Westmost Grange 884, Bandon, Oreg 210
West Side Ditch Co., Blackfoot, Idaho 501
White, A. B., Boise, Idaho 501
Whiting, O. C., Weiser, Idaho 501
Whorton, George, owner, Independent Enterprise newspaper, Payette, Idaho 502
Wilcken, Lane L., manager-first secretary, Bank of Idaho, St. Anthony 416
Wilford Canal Co., St. Anthony, Idaho 406
Wilford Irrigation & Manufacturing Co., St. Anthony, Idaho 503
Woodmansee, Jack, Boise, Idaho 503
Yearsley, H. B., Pocatello, Idaho 503
Riechers, Alfred J., Twin Falls, Idaho, statement submitted for the record 173
Rigby, Parley, Idaho Falls, Idaho, statement submitted for the record 178
Riter, J. R., development engineer, commissioner's office, Bureau of Reclamation, Department of the Interior, Denver, Colo., statement submitted for the record: Estimate of Power Production and Costs of Generation—High Hells Canyon Dam 27

S

Saylor, John P., Representative:
Data regarding cost of Hungry Horse Dam 90
Letter of May 25, 1955, to W. A. Dexheimer, Commissioner of Reclamation, re certain information on Federal reclamation projects 74
Reply of Commissioner Dexheimer dated July 8, 1955 74
Table A–1—Authorization and construction costs of reclamation projects—Projects existing or under construction as of December 31, 1954 75
Table A–2—Writeoff of construction costs by act of Congress, December 31, 1954 78
Table A–3—Repayment of reclamation projects 79
Statement on payout period for selected reclamation projects, June 1, 1955 80
Extension of repayment periods resulting from execution of contracts pursuant to section 7 of the Reclamation Project Act of 1939 or the Rehabilitation and Betterment Act of October 7, 1949 83
Sharp, N. V., Filer, Idaho, statement submitted for the record 303
Silbaugh, J. H., president of the board of directors, North Side Canal Co., statement submitted for the record 301
Smylie, Robert E., Governor, State of Idaho:
Statement Before Senate Interior and Insular Affairs Committee 244
Telegram dated July 13 230
Steel, Mrs. Ethel, Parma, Idaho, statement submitted for the record 135

W

Washington Public Utility Districts Association, Seattle, Wash., statement submitted for the record 228
White, Elwyn L., area engineer, Bureau of Reclamation, Department of the Interior, Boise, Idaho, statement submitted for the record: Scriver Creek Power Facilities, Payette Unit, Mountain Home Division, Snake River Project, Idaho 48
Wilson, Asher B., Twin Falls, Idaho, statement submitted for the record 125
Witham, O. W., Jerome, Idaho, statement submitted for the record 179
Witham, Mrs. Emma L., Jerome, Idaho, statement submitted for the record 179